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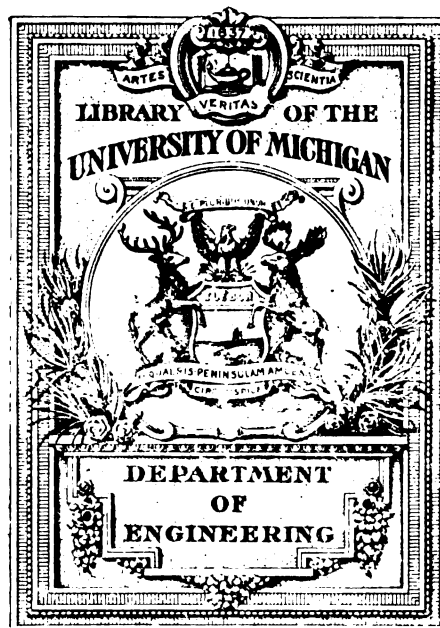
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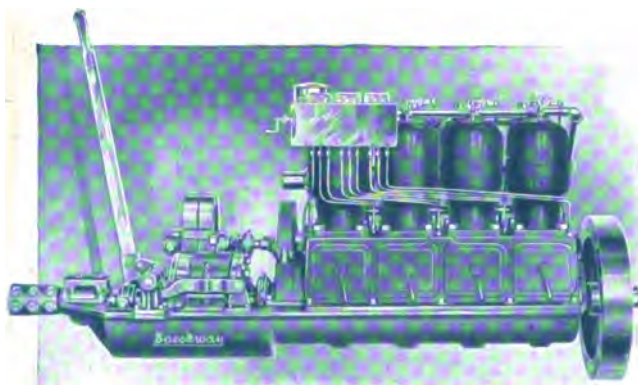
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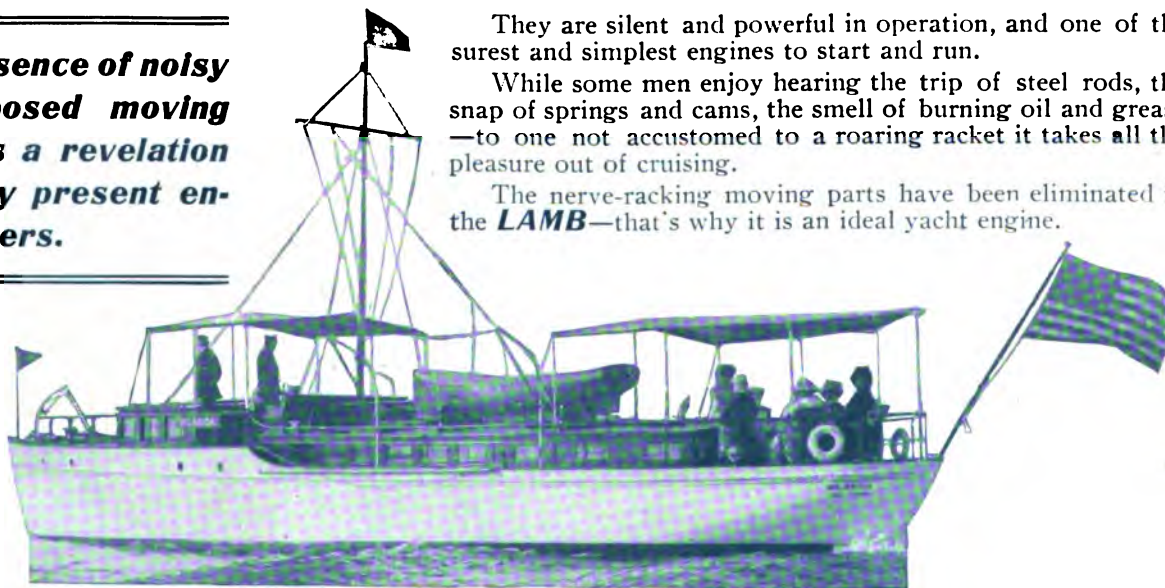
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THE RUDDER

EDITED BY

THOMAS FLEMING DAY

"A port ye have, I know not where—
'Tis far beyond my world—
But pray some day may find you there
With all your canvas furled."

VOLUME XXV



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1911

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From an Original Painting by Warren Sheppard,
in possession of E. M. Gill, Esq.

A Canal in Venice

*"White phantom city, whose untrodden streets
Are rivers, and whose pavements are the shifting :
Shadows of palaces and strips of sky."—LONGFELLOW*

The Rudder

Edited by THOMAS FLEMING DAY

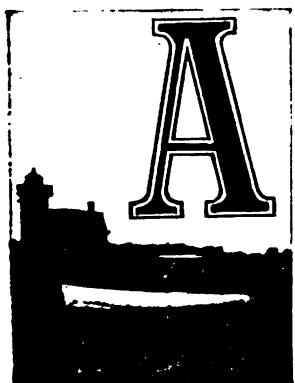
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JANUARY, 1911

No. 1

BRITISH-BUILT POWER YACHTS

J. Rendell Wilson



AFTER America, the finest and largest fleet of power yachts, cabin cruisers, and auxiliary vessels now afloat, is undoubtedly owned by the amateur sailors of Great Britain, and in the course of this article the writer will endeavor to give the more interesting points in connection with boats selected at random from among the many excellent examples of successful craft that have left the slip-ways of English yards. Vessels of this

description are no longer so rare that the launching of a vessel is a thing to write home about, but every new boat has its individual, and perhaps ingenious, features, either in connection with its lines, accommodation, or installation, and such, when combined to make the whole, are of universal interest, especially to the man who is contemplating building a boat for himself. Considering that the rivers of the British Isles are little more than streams, and sheltered waters are few and far between, the recent rapid development of power craft is little short of marvelous. England, worse luck, has not the natural advantages of the Great Lakes, mighty rivers and wide canals such as America happily possesses, hence, such craft as there are, are of an entirely different class. For instance, it is impossible for the power yachtsman to put to sea for a few days without meeting with boisterous weather, consequently, his boat must be of a more robust type than the one owned by his American brother, who often enjoys perfect calms for weeks on an end. Not for one moment do I mean to infer that American craft are unseaworthy. Far from it, as is only too well proved by the cruisers that take part in the numerous long-dis-

tance races held each year, such as the Philadelphia-Habana contest for THE RUDDER Cup. Extended racing, by the way, does not hold favor in the British Isles, the longest race being the annual London to Cowes cabin-cruiser contest—only a 200-mile course—which is held under the auspices of the British Motor Boat Club. The yachting man in that country prefers to spend his week-end cruising from port to port, almost, as it were, within hail of his office, should business call him. It is a conundrum to most Englishmen how Americans can manage to devote so much time to the sport.

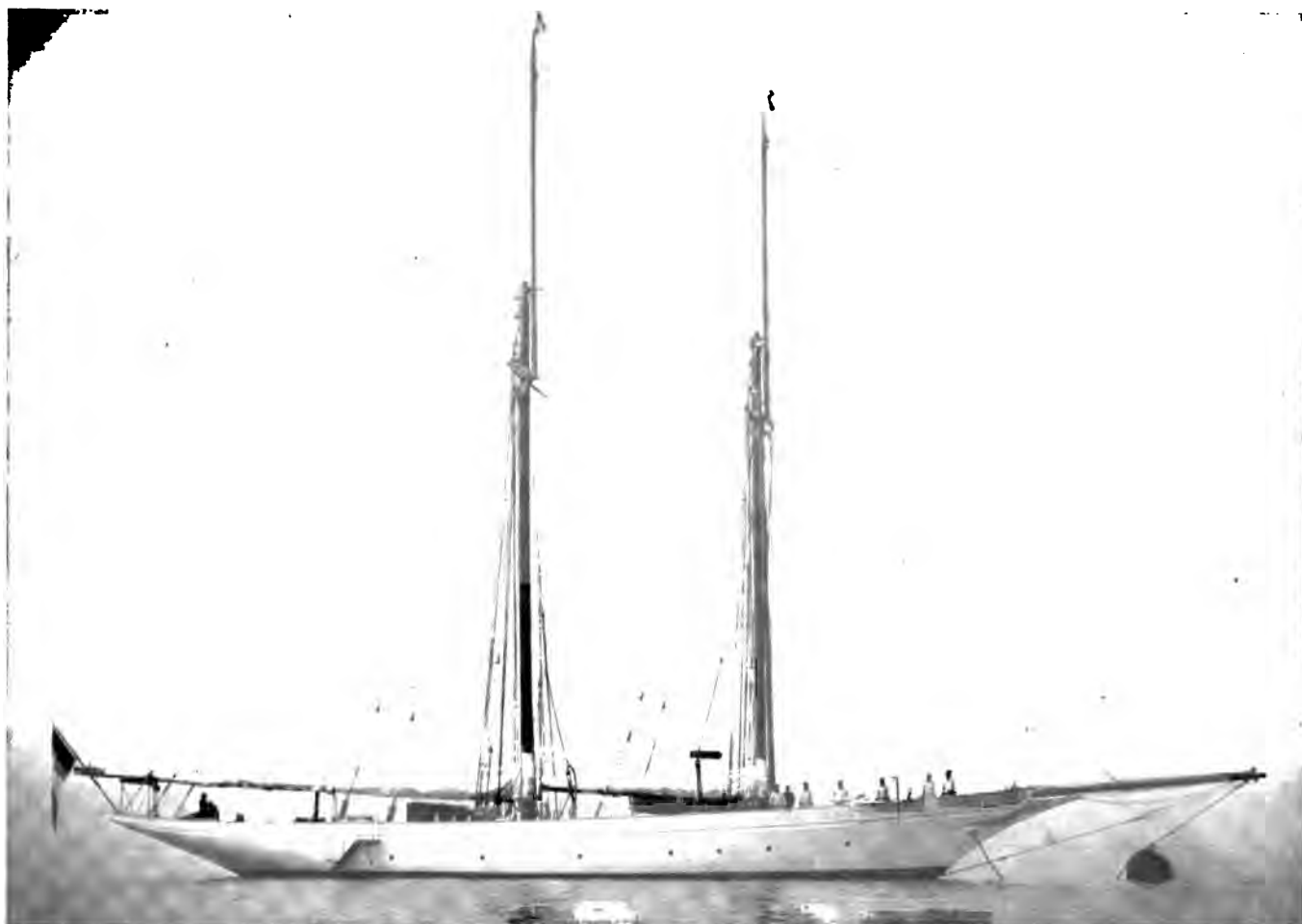
One of the pioneer British power yachts is Trident, a triple-screw, 120-h.p. vessel built in 1906, by Woodnutt & Co., from designs by Mr. A. Westmacott. Her success resulted in a number of similar craft being constructed and put into commission by yachting men who, hitherto, placed their faith in steam or sail. Trident is 77 feet in length, with 13 ft. 10 in. breadth of beam, and 5 ft. 4 in. draught. She has a tonnage of 64, and is equipped with three 40-h.p. Woodnutt engines using kerosene fuel, which give her a speed of 11 knots. The cylinders have a bore of 5½-in. by 6-in. stroke, and the power is developed at 700 r.p.m. At full speed she has a cruising range of 610 nautical miles, while, with the center engine only, this is increased to 1,240 nautical miles, and with two engines 780 nautical miles. But perhaps the most interesting part of this vessel is her accommodation arrangements. With the exception of the very roomy deck-house and funnel, there is no superstructure, and in several features reminds me of several well-known American power yachts. At the extreme forward part of the hull there is a lavatory for the crew, aft of which is the forecabin. This space has a headroom of 6 ft. 9 in. and contains four folding cots. Next is the captain's cabin on the starboard and the galley on the port side. Next again is the ladies' cabin, which contains two beds, a sofa and two wardrobes. It has 6 ft. headroom, and

is connected to a lavatory, on each side of which are the fuel tanks. Aft of this space is the engine room, which also contains an electric lighting set, the boat being electrically fitted throughout. Aft again is the owner's cabin on the starboard, and a stateroom on the port. Next is the saloon containing two sofa berths, cellerette, folding-table, etc., aft of which is a lavatory and pantry. In the stern is a fairly large space for stores, etc. On the whole, the accommodation plans for a yacht of her dimensions would be hard to beat. I must not omit to mention that a 15-ft., 8-h.p., power tender and a 13-ft. dinghy are carried. In addition, she carries an auxiliary schooner rig.

A type of vessel that has found the greatest favor among British yachtsmen is the power auxiliary, and they are now to be seen in large numbers, especially as the past season has shown a great advance in this respect. Probably the most magnificent boat of this class is *Sylvana*, a 252-ton high-powered auxiliary schooner, which was launched a few months ago by Camper & Nicholson of Gosport. During Cowes week she was looked at with great interest, being quite the latest development of a schooner yacht, having the best sailing and racing qualities and, at the same time, capable of making a voyage round the world. Her over-all length is 110 feet, with a water-line length of 90 feet, by 23 ft. 4 in. breadth, and 11 ft. 6 in. draught. The hull was designed by her builders, while the whole of her machinery was constructed and supplied by the well-known torpedo-destroyer build-

ing firm, Messrs. J. T. Thornycroft & Co. The propelling engine is a four-cylinder engine, developing 47-h.p. on kerosene fuel, driving a three-bladed solid propeller through a reverse gear at 320 revolutions per minute. In addition, there is a 7½-h.p. kerosene set coupled to a dynamo, giving an output of 30 amperes, 65 volts, which is used for lighting and operating the capstan—a very valuable combination. She also carries a 20-h.p. gasoline tender in davits. Her accommodation consists of a large saloon, owner's cabin, several staterooms, lavatories, galley, engine room, forecastle, and a spacious deckhouse. Under power alone, *Sylvana* can maintain a speed of over 5 knots, and can be turned in her own length. She is also very handy under sail, and it was a revelation to many people to see her skipper sail her right among the crowded lines of yachts at Cowes during the second day of the regatta. Finally, I may add, we can do well with more of her type.

From *Sylvana*, I will turn to the small full-powered cruiser. From this class I will select the veteran *Major*, ex-Napier *Major*, now owned by Mr. L. M. Waterhouse. She has probably won more prizes than any other boat in the British Isles, having been successfully entered for nearly all the principal cabin cruiser contests held by the British Motor Boat Club. Although only a 9-tonner, she has won the annual long-distance race from London to Cowes four times. She was built in 1905, when she cruised from London to the extreme north of Scotland and back, including a 96-hour,



Elizabeth, a 230-Ton British-Built Auxiliary



Bronzewing, a Triple-Screw Yacht

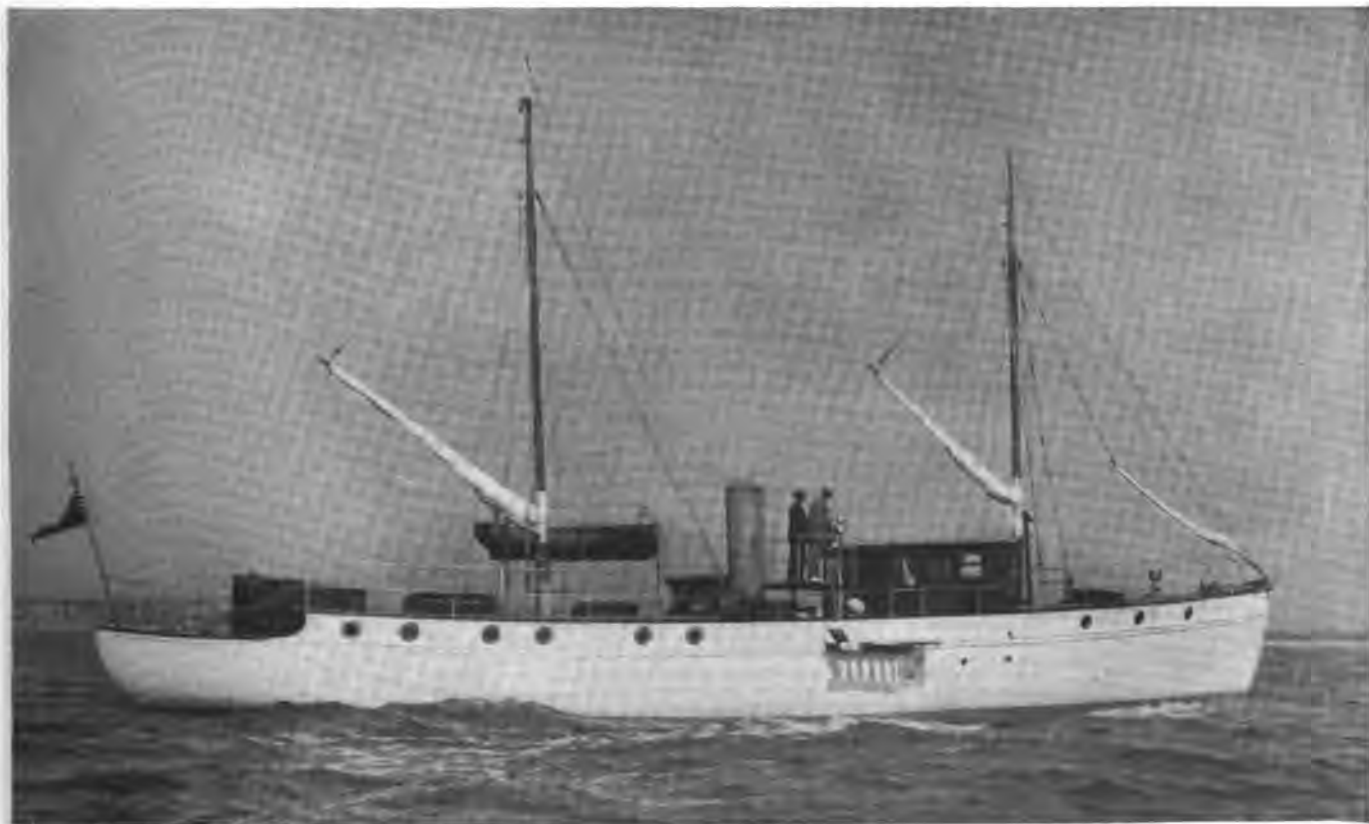


Ombah, Winner of the Royal Motor Yacht Club Cruising Cup, 1909

non-stop run. The following year she cruised round Great Britain, and altogether she has covered considerably over 12,000 miles without any mechanical breakdown. She is 45 ft. 1 in. in length, by 9 ft. 6 in. breadth, with a draught of 5 ft. 8 in., while she has a freeboard of 2 ft. 6¾ in. A 24-h.p. Napier gasoline engine is fitted, driving a solid propeller through a reverse gear, giving her a speed of over 8 knots. The four cylinders have a bore of 4 in. by 6 in. stroke, with a total piston area of 50.28, and the engine turns at 600 revs. per minute. She is well-decked, and has a raised cabin top 14 inches above deck, dropping down forward, which is fitted with dead-lights and ventilators. There is a small forecabin and a lavatory forward, and abaft that is a roomy saloon, which contains bunks for three people. The engine room is aft this space and is entirely separated. It also contains a dynamo and storage battery, electric lighting being fit-

ted throughout, including head and side-lights. The switchboard has been arranged so that the cells may be charged, or used, in groups as required. A 17-ft. pole-mast has been fitted to take a sail for steadying purposes. Finally, I may say that Major's gasoline carrying capacity is sufficient for a 3,000-mile run, and she is quite seaworthy enough to cross the Atlantic, if necessary. This year she has secured no fewer than 15 first prizes—a worthy addition to her record.

Although not actually built in England, Bronzewing, a well-known Sydney triple-screw power yacht, of 300-h.p., must not be passed without mention, as she was constructed from British colonial designs, and is fitted with British-made engines. She was built a few years ago for the late S. Hordern, Esq., the Australian millionaire, and has a length of 120 feet, by 17 ft. 6 in. breadth



Trident, One of England's Pioneer Power Yachts



Bonita, a 50-Ft. Thames Cruiser



Thirty-Tonner Gazeka

of beam. Her installation consists of three 8-in. by 8-in. four-cylinder Thornycroft engines and reverse gears, each developing 100-h.p. at 750 revolutions per minute. The engines are started by compressed air, the compressor being driven by a 6-h.p. Thornycroft engine. Electric light is installed throughout, the equipment being worked by a separate engine. As I believe that she has already been described in *THE RUDDER*, I will be content with giving the above short description.

A boat of historic interest is Hova. My readers will all perhaps remember the famous 40-ft. racer Wolseley-Siddeley that came to America a couple of years ago to race for the B. I. Trophy. She has now been converted into a cabin cruiser by Baron Von Bissing, Vice-Commodore of the Sussex Motor Yacht Club, and renamed Hova. Her 400-h.p. engines have been removed, and

a Wolseley engine of about 50-h.p. substituted, and being finned-lined she has now a speed of about 14 knots. The fore part of the hull has been decked in, and a coach-roofed saloon erected midships. There is also a short mast forward. A folding dinghy is carried, and she now makes a very comfortable and clean-running cruising craft. In this case, the old epigram, "How are the mighty fallen," hardly applies.

The twin-screw 80-h.p. power yacht, Gazeka, is what one may term "a very nice and tidy little craft." She was built a few years ago for Lieutenant North, by Camper & Nicholson. She has a tonnage of 30, while her length is 63 feet. Her installation is two 40-h.p. Gardner kerosene engines driving twin screws, and her accommodation consists of a saloon, two staterooms, engine room, lavatory, galley, forecabin and deckhouse. In davits she



Swiftsure, a Fine Example of the Sewn System of Construction

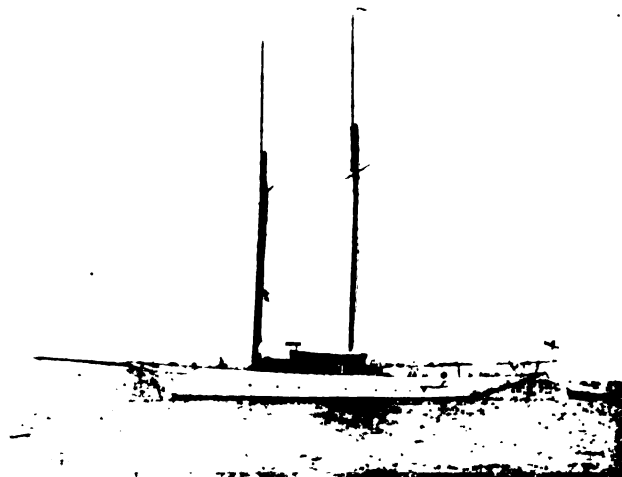


Hova, ex-Wolseley-Siddeley, the Famous 40-Ft. Racing Craft as a Cabin Cruiser

carries a dinghy and a gig. She is a good, seaworthy boat, with ample freeboard, and has given excellent service to her owners.

Similar in type to Sylvana, is the 230-ton auxiliary schooner Elizabeth, built not long ago by White Bros., Southampton. She is 107 feet over all, by 23 feet breadth with a draught of 13 ft. 5 in., and carries no less than 6,456 square feet of canvas. The engine, a 70-h.p., four-cylinder Parsons, is installed beneath the cabin flooring—out of sight, but *not* out of mind, one is apt to say. Her propeller is a two-bladed Gaines reversible and feathering. It feathers so as to lie fore and aft in the cutaway of the deadwood, and thus gives no resistance when under sail power alone.

As is proved in the case of Major, the cabin cruiser has its merits, and inland waterways are open to craft of



Sylvana, a New Thornycroft Auxiliary

this class where her big sisters cannot go. Last year Ombah, Mr. H. Poate's 45-ft. cabin cruiser, secured the R. M. Y. C. Cruising Cup, which she won for her 1,000-nautical-miles voyage through the canals of Europe. She started from London and entered the French canals at Calais, and followed the rivers and canals to the Mediterranean Sea, and then back to Havre, and across the English Channel to Southampton. She is a very handsome boat, 9 ft. 6 in. in breadth, by 3 feet draught, and is completely decked in, with the exception of a 6-ft. cockpit. A three-cylinder Mitcham F. and B. (Fay & Bowen) engine is fitted, and she has two pole-masts for auxiliary sails.

One of the fastest and finest power yachts completely built and engine^d in England is the Wolseley-engined boat, Swiftsure, built last year for a Russian nobleman. Exceptional headroom was required, without too much top hamper, and a glance at the illustration will show how



The Well-Known Major, ex-Napier Major



Whirlwind, 111 Ft. O. A., Triple-Screw Six-Cylinder, 8x10 Speedway Engines, Owned by Julius Fleischmann, New York City

this was carried out in the designs. She is a twin-screw vessel, 70 ft. in length, and is fitted with two of the now famous Wolseley engines, developing 160-h.p., giving her a speed of 18 miles per hour. It will be remembered that Pioneer, the Duke of Westminster's hydroplane, is fitted with Wolseley engines. Swiftsure was carvel-built, of mahogany, by Saunders, three skins sewn together by copper wire, with a layer of silk between each thickness of planking. Electricity is fitted throughout and is generated aboard, and on deck a powerful searchlight is carried.

The cabin launch is very popular among British powerboatmen, whose pockets will not reach to the more luxurious craft, and of this type, a boat which calls for particular mention is Bonita, a handsome 50-footer, which recently underwent her trials on the Thames. She is an example of a good seagoing launch, having ample beam and freeboard. She is conspicuous by the absence of sleeping accommodation, being essentially a day-cruis-

ing craft. This, of course, leaves plenty of floor space. The hull is carvel-built of selected pitchpine, with American elm frames, and the construction generally is of a high quality. Her breadth is 10 ft. 6 in., with 3 ft. draught. She has a graceful sheer and the tumble home of the carvel stern is very pleasing. A four-cylinder Thornycroft gasolene engine of 54-h.p. is fitted, having a 6-in. bore by 8-in. stroke. The controls and reverse lever are carried to the wheel on the bridge deck, making her a one-man controlled job. Her speed is well over 10 miles per hour; in fact, the mean of 6 runs over a $\frac{1}{2}$ sea-mile course, with and against the tide, was 9.7 knots. The cabin is beautifully fitted and is paneled in polished mahogany, and the seats are upholstered in red plush. There is also a lavatory, while the forward part of the hull contains deck chairs, and is sheltered from the sun by an awning. I should add that both the reverse gear and solid propeller are by Thornycrofts.



Milwin, 82 Ft. O. A., Six-Cylinder 8x10 Standard Engine, Owned by Edwin G. Bruns, New York City

IN THE TRACK OF THE TRADES

Lewis R. Freeman

PART II

Marquesas to Tahiti, to Tutuila

THE least known of all the island groups of the South Pacific, the Marquesas are in many respects the most worth knowing. The most Northeasterly outposts of Polynesia, their position brought them in the way of the early navigators at a time when much of the rest of the South Pacific was unknown, and during the long period that the Spanish galleons carried a yellow stream of Incan gold from Peru to Panama on the first stage of its European voyage, these islands harbored as ruthless a colony of pirates as ever swarmed on the Mosquito Coast or the Dry Tortugas. These buccaneers—the most unbridled lot that ever hoisted the Jolly Roger—in part took to the native ways of living, including, it is said, cannibalism, and in part brought the natives to their own, and

the tales that “shuddered their way to Europe in delirious sailor jargon” of the doings of these days are still enough to freeze the blood with horror, though falling only from the lips of some grizzled old trader, lolling at ease in his pajamas and checking copra sacks as he talks. Gradually, with the years, the predominance of the natives in number bred down the white strain, until to-day one reads evidences of the early occupation only in a thinner-lipped, harder-eyed Kanaka than he sees in neighboring groups; a handsomer type physically, a keener one mentally, and one whose morals are in rags and tatters.

The Marquesas are the only islands of the Eastern groups of the South Pacific where cannibalism is still practised. This does not mean that one is likely to be pounced on and eaten as soon as he sets foot ashore, but only that under certain favorable conditions, when there is small chance of its being brought to the attention of the government, this barbarity is still resorted to. The French and missionaries have been active in suppressing cannibalism and its attendant rites, but, principally on account of a certain religious significance attaching, it persists in bobbing up perennially. The dead in tribal



A View from Deck of Lurline in Tahiti

quarrels are still eaten when the opportunity offers, but only one white man and a Chinaman are known to have been sacrificed in the last decade. Accuse a Marquesan of being a cannibal and he will ordinarily deny the soft impeachment much after the manner of a school girl taxed with being a flirt. Some will brazen it out, however, and of such was a hardened old offender who explained to the Lurline forecastle one night that, of the various classes of "long-pig," he preferred white man to native because his meat was less salty. Chinaman he had never eaten, he said, but—and here he cast an appraising look to where our recently shipped cook was shuddering at the galley door—he was going to try one at his first opportunity. The terrified Si-ah would not even go ashore to do the marketing after that.

The Marquesans are among the greatest tattooers in the world, and much of the fierceness of expression noted in the men is due to a black scrollwork that covers the face from the eyes down, strongly suggesting a highwayman's mask. One of the most ornate pieces of tattooing was that on the famed right leg of the late Queen Vaekehu, numerous studies of which may be seen in the museums of London and Paris.

Speaking of tattooing, the story of Lurline's contribution to that branch of Marquesan art may be of interest. The second day of our stay in Taoi-haie, in testing some newly-opened shells, we fired ten or a dozen shots in quick succession from the yacht's brass signal cannon. At the first report a bevy of Marquesan damsels who had come off to sell sandalwood and shark-tooth necklaces stampeded to their canoes, from which they could not be induced to return until all signs of activity in the firing line had ceased. Then they all clambered gleefully back and one of them so far forgot herself as to sit down on the deck and lean languidly back with her plump shoulder upon the sizzling hot breech of the signal gun. That was the last languid movement she made for some

time. With a scream of a frightened wild cat, she cleared the low rail as though shot from a catapult, swam half a hundred feet under water, to go lunging straight off for the shore as soon as she came to the surface.

Now it chanced that across the breech of our little cannon was the word "LURLINE," picked out in ornamental scrolleries, and beneath it, in rich repoussé, the figure of a puffy dolphin gulping down a buxom mermaid. Such of this bas-relief as had come in contact with the fair Marquesienne's shoulder left its mark, which striking new design was no sooner seen by the tribal tattooist than he needs must perpetuate what he feared, no doubt, was but an ephemeral impression. So fishbone needles and black gum were brought into play, and the day before our departure the proud and grateful young beauty brought the picture off for us to see. "INE" in flowing letters, we read, and beneath a stub-tailed mermaid appeared in the act of disappearing into the impressionistic but unmistakable head of a dolphin. A half dozen of the now distinguished young person's girl friends accompanied her, and every one of the envious minxes insisted on embracing, leaning against and sitting upon that fancy signal gun breech in anxious endeavors to get patterns of their own to take back to the tattooist.

Our week in Nuka Hive was, perhaps, the most novel one of the entire cruise. The European population of Taoi-haie was limited to the resident administrator, Captain of the Port, Captain of Gendarmes, some French missionaries and a German trader. These made up in kindness what they lacked in numbers, and with the local and visiting chiefs outdid each other in making our visit a continual round of new and pleasing experiences. One day there was a goat drive; another, the native boar furnished the sport; and on a third, crowning experience of all, one of us joined the natives on a wild bullock hunt where the only weapons carried were long machetes. Then there was the journey we all took to visit Queen



Papeete, Tahiti, from the Signal Station

Mareu, a twenty-mile pony ride over two ranges of mountains, through the heart of the incomparable Typee Valley to the Bay of Hatiheu, the most sublime combination of mountain, vale and sea to be found in the world. The palace, with its run of galvanized-iron roofs, was not very palatial, nor was the queen, in her holaku of print, overly regal; but the best that her little kingdom afforded was at our disposal, and a quiet dignity pervaded all her entertainment that would have done credit to St. James.

The queen's "Lord Chamberlain" was an attractive young American, by the name of McGrath, who in addition to his official duties looked after the interests of a Tahitian Trading company on the leeward side of the island. On the occasion of our visit McGrath showed us a half-completed cutter—an open boat of about thirty feet in length designed to be rigged as a sloop—which he was building to use in picking up copra from adjoining islands. Two months after our departure he launched this boat, and on her maiden trip, accompanied by a single native boy and with a pitifully small stock of provisions and water, was blown off to sea to undergo one of the most thrilling experiences in the annals of the South Seas. An extract from the brief account of his adventure related to us in a letter received six months later may be of interest to such yachtsmen as are prone to feel themselves the victims of hard luck at having to spend a summer night out of port in a snug, decked-over forty-footer.

"I have had a rather exciting time of it for the last six months," reads this penciled letter, which we still preserve, "having been blown away from the Marquesas group in the little boat which I was building when you called at the island. It was owing to the unshipping of the rudder, and as the boat had an overhanging stern it was impossible for us to re-ship it for four days, owing to the heavy sea. We had no oars with which to guide the boat, otherwise I might have fetched the lee of Nuka Hiva. We were more than two hundred miles West of the group when we succeeded in getting the rudder repaired, and had but a gallon of water left. As it then fell calm I decided to run for Caroline, with the breeze and strong current in our favor, and made the island O. K. within an hour of the time I calculated. To say that I had a hell of a time is putting it mildly. After trying twice to make Tahiti, and running into a South-east gale each time, I ran for Samoa, and the last five days of the run had the full force of the hurricane which swept the whole of the South Pacific from August 12th to 18th. It was so fierce that Sierra, a 6300-ton steamer of the America-Australia Line—was blown away from the Samoas, and could not effect an entrance. Several vessels were piled up in the neighborhood of Samoa, and many dismasted; yet my boy and I lived it out in a perfectly open boat.

"We were blown away on the 7th of July, and made Tutuila on the 18th of August, after having sailed more than 3,000 miles. The boat filled once and almost sank, twelve miles from Pago Pago, but we threw everything overboard to lighten her, baled her out, and then slashed her through it with reefed foresail. She was the finest sea-boat that ever split a wave, and at Samoa beat a twenty-ton schooner seventeen hours in a gale of wind from Savaii to Apia—a dead beat of sixty miles."

To yachtsmen, the only comment on this letter that will be necessary is that we verified from a half-dozen different sources the fact that McGrath and a Marquesan boy were blown away from Nuka Hiva on July 7,



A View from Lurline's Anchorage in the Marquesas

1904, in an open boat, and that on August 18th of the same year McGrath and a Marquesan boy, both in an exhausted condition, sailed into the harbor of Pago Pago, Samoa, in an open boat; also, that such storms as were alluded to actually prevailed in the South Pacific at the times specified.

Before leaving Hatiheu a visit was paid to the old cannibal feast ground, an extensive series of natural and artificial caves in the heart of a mountain, where all the old ceremonial rites were performed, and where, it is recorded, a pirate chief once presided over the sacrifice, according to Marquesan custom, of half a hundred white captives brought from a raid on the Panama coast. The recent discovery by a French expedition of a large number of unmistakably Caucasian skeletons in this vicinity lends weight to this barbaric tale. This feast ground, for some reason or other, has been "taboo" for many years, and no native can be induced to set foot within its dread confines under any conditions.

Queen Mareu and her retinue, Her Highness in a flowing habit of print and tapa sitting in an imported French side-saddle, accompanied us back to Taio-haie, and on the evening preceding our departure came off to the yacht for dinner and fireworks. French officialdom, brave in gold lace and with straggles of orders across its breasts, was out en masse; also the officers of a couple of trading schooners, one of whom was in pajamas, and the German trader, choking till his eyes bulged in the uniform of the Imperial Guards of ten years before.

Early dinner over, Queen Mareu, at ease on the rail of the cockpit, with one foot stuck through the spokes of the wheel and the other polishing the binnacles, related—through McGrath as interpreter—stories she had heard from her grandfather of the time when Nuka Hiva was a whaling rendezvous, tales only less terrible than those of the days of the buccaneers. The French officials mixed cool, green drinks from the specially-provided bottle of absinthe, and in the cabin, bowed above a chart, the trading captains gave the Commodore extra careful directions for threading the passages of the treacherous Paumotos. On the forward deck Queen Mareu's retinue fraternized with Lurline's crew; now the one raising its voice in a "himine," now the other in a "chan-

tey," and then both together in "himine-chanteys" and "chantey-himines."

In the whole cruise's necklace of tropical nights that one shines forth with a sparkle all its own. As the afterglow faded above the opaque mass of cliffs behind the village, the trade wind shifted slightly and came to us across the blossom-clothed spurs to the Southeast, suffusing, as with a draught of incense from the opened door of an Eastern temple, the whole hollow of the bay in the drowsy perfume of the yellow cassi. Lights began twinkling here and there in the bush as the darkness deepened, and presently the lines of the verandas of the official residences were picked out in rows of colored lanterns. The surf broke uproariously along the shore in spurts of phosphorescent flame, and in its pause the barbaric cadence of "himines" and "hulas" floated out to us across the star-paved surface of the bay. On this, though they seemed to tickle the native fancy, the fireworks broke somewhat in the nature of an anti-climax.

At noon, on the 15th of April, Nuka Hiva, a French schooner of about seventy tons, the greyhound of the Marquesan fleet, hove up anchor and got underway for the entrance with the courteously avowed intention of showing us the way to Tahiti.

"Venez nous voir en arrivant a Papeete!" her captain shouted as she came up past us and went about; and "merci—avec plaisir!" we faltered back, as we waved him a vigorous good-bye with our napkins from the companionway.

At one o'clock we were underway ourselves, beating out against such baffling puffs of the tradewind as reached the inner bay. Sailing within four points of the wind in the smooth water of the narrow passage, by two o'clock Lurline had overcome the hour's lead of Nuka Hiva, and a few minutes later passed ahead and well to the windward of her through the "Sentinels." Clearing the harbor, sheets were slacked off, and with a strong beam wind we bowled away on a S.W. $\frac{1}{2}$ S. course at a gait which presaged a lively passage if it continued. At 3:15 we took our departure with the conspicuous Cape Marten bearing N.E. and an unnamed point on the West end of the island N. by W. At this time Nuka Hiva was already hull down astern.

Encouraged by the first prospect of a steady and favorable slant of wind since we left San Pedro, a good spread of sail was hoisted, which, as the barometer was high and the sky unthreatening, it was hoped to be able to carry all night. The sea was light, and in a gushingly fresh wind the yacht reeled off ten and eleven knots an hour all through the first watch. The breeze fell lighter after midnight, however, and squalls in the morning and early forenoon made it impossible to carry the light sails, considering which, the run of 195 miles for the twenty-two hours ending at noon of the 16th was by no means bad.

The afternoon and night of the 16th we were clear of the squall belt around the islands, and the strong, steady trade from the E.S.E. drove the yacht along at an almost undeviating speed, the log varying scarcely over two-tenths from ten knots for any hour. Toward evening the benefit of a strengthening wind was offset by a rising sea, and through the last end of the night we proceeded under shortened sail. At daybreak the light sails were clapped on again and for several hours of the forenoon an average of but a shade under eleven knots was reeled off. At noon the dead reckoning showed close to 230 miles logged in the last twenty-four hours, and

when the position by observation was figured it appeared that a favorable set of current had added enough to this to bring the day's run up to an even 240 miles. The temperature of the air was 86° this day—the highest recorded at sea during the voyage—and that of the water was 82°.

At four o'clock in the afternoon of the 17th a rag-tag fringe was sighted off to S.S.W., and word went round that we were raising the first of the dread Paumotos. This group, often down on the charts as the Tuamotu, Low or Dangerous Archipelago, is a cluster of about a hundred coral atolls covering several degrees in both latitude and longitude of the extreme Southeast corner of Polynesia. They are noted for their treacherous currents and terrific hurricanes, and are reputed to have had more schooners piled up on their white coral beaches than any other half-dozen groups in the South Seas. The name is



Tahitian God Presented by Chief Ori to Lurline

a byword for all that is bad with every skipper who has sailed among them, and "*Aussi sâle que dons ces maudits Paumotos*" is the last degree of superlative in describing desperate navigating conditions. Of harbors there is none save the lagoons of the atolls themselves, and the entrances to these are so narrow and so beset by currents that the passage of them is almost impossible except at the turn of the tide, and is highly dangerous even then. Once inside the lagoon the protection from everything but hurricanes is perfect.

The average life of a trading or pearling schooner in the Paumotos is but four or five years, and so notoriously world-wide is their reputation as a marine graveyard that neither in Europe, Australia nor America can a ship be insured that is plying in their trade. It is even the custom to insert in the policy of a ship running to adjacent islands a clause declaring that no insurance

will be paid should the vessel by any chance be lost in the Paumotos.

The island we had sighted turned out to be Ahii, one of the largest of the group, and by five o'clock it had grown from a colorless horizontal blur to a solid wall of white and brown and green, where the snowy beach ran up to the dark boles of the cocoanut palms, and these in turn ran out in fringes of lacquered verdancy. At a distance of half a mile our course was altered slightly to parallel that of the shore line, and in a rapidly smoothing sea, but with an unabated breeze, we began running down the low, even leeward coast of the strange island. From the deck only the cocoanut barrier, a tossing mass of up-ended feather dusters, met the eye to windward, but from the masthead, through rifts in the line, could be seen great green gashes of the smooth lagoon. Farther still, in blended brown and olive, the windward rim of the island stood out sharply against a vivid turquoise ribbon of open sea, itself defined against a dark mass of cumulo-nimbus that was rolling in before the wind from the Southeast.

Here followed a spell of the prettiest sailing that the good Lurline, sapient of the seas of many latitudes, ever did, or probably ever will do. We were sufficiently close to the steep-to lee shore of the great atoll to be sailing in a sea as smooth as the land-locked lagoon itself, yet at the same time were far enough beyond the wall of the cocoanuts to still enjoy the full force of a moderately strong and wonderfully steady breeze. We were not anxious to get too far in among the islands during the night, and for this reason no light sails were set; yet under mainsail, foresail, forestaysail and jib, the log was shortly spinning up mile after mile, with six minutes and less of interval between each bell.

The wind was on the port beam, and blowing so smoothly that the yacht, unshaken by the lift or slap of waves, held to her even heel as though chocked over in the ways. Of pitch or roll or shiver there was no sign, and for all the motion but that swift, undeviating forward glide, she might have been frozen up in a freshwater lake. She simply shore her way through the water as a draper's clerk runs his unworked scissors down a length of green silk.

At dinner in the cabin the unprecedented stillness was almost oppressive. The familiar creaking of the in-laying on the mainmast at the head of the table was no longer heard, nor the crash of waves and the rattle of spray to windward, nor the shrill of spinning sheaves and the rat-a-tat of the foresheet block on the deck. The only sounds were unwonted ones—the tick of the cabin clock, the rattle of pans in the galley, the not over-elegant blow of post-prandial conversation in the fore-castle, and running through all, the hissing rush of the water along the sides.

The sun had set while we were at dinner, and the afterglow, in swift tropic transitions, had flamed and faded and flamed again, and was fading out for the last time as we came on deck. The sea to the West still glimmered here and there in patches of dull rose from the reflections of a few still-lighted tufts of cirrus clouds. North and South it was darkly purple, shading to a misty slatiness where water and sky merged in banks of low-hanging strata, and East to the island it lay dead and opaque, save for the spots where it was pricked into life by the images of brightening stars. Overhead the Pleiades and Orion's Belt and Sirius, the Dog Star, were turning from pale yellow to orange, and from orange to



Scrubbing Lurline's Mainsail, Tahiti

lambent gold, and to the North the Big Dipper, half submerged in the sea, was rising slowly to pour out its nocturnal libation to its stately vis-a-vis, the Southern Cross. And under it all, swiftly, silently, mysteriously as the Flying Dutchman, her track marked for a mile astern in a comet-like wake of livid gold, Lurline went slipping down the lee of the long atoll at an easy, even, effortless ten knots an hour.

Presently, just as twilight was giving way to full darkness, a red light was reported crossing our bows, and we shortly made out a two-masted schooner beating in toward the entrance to the lagoon, nearly opposite to which we were then sailing. Several times across the still water came the strangely mixed jumble of French and Kanaka and English orders, mingling with the creak of booms, as she was put about, and finally the voice of the skipper cursing fluently because the tide was running faster in the passage than was to his apparent taste. Then a great yellow moon got up and sat upon the further fringe of the lagoon, and back and forth across the face of it we saw the little schooner beat in safely through the narrow passage. As she left the moon track a bonfire sprang into life somewhere upon the inner beach, and through the serried ranks of the cocoanuts we watched her pink sails crumple up as halyards were let go, while the sharp staccato of a chain running through a hawse pipe floating down the wind told that she had won her anchorage.

At nine o'clock it was decided to pass to the West of the island of Rangaroa, instead of to the East as had been our intention, and to this end the course was altered to W. by S. To minimize the chance of overrunning our reckoning in the treacherous currents and thereby



Party from Lurline Sightseeing in Tahiti

piling up the yacht on the beach of Tikehau which lay beyond Rangaroa, foresail and jib were furled, only the mainsail and forestaysail remaining set. Even under this greatly reduced sail seven knots an hour was averaged all night, daybreak finding us off the Northwest corner of Rangaroa. Down the lee of this island—under sailing conditions only less perfect than those of the previous evening—we ran all forenoon of the 18th, sinking its Southwest corner early in the afternoon, just as we raised a peak of the combined coral and volcanic island of Makatea.

Makatea is famous as having been the rendezvous of the notorious Marquesan half-caste, Boraki, quite the most picturesque pirate that has made history in the South Pacific. The story of the retributive justice which overtook Boraki in endeavoring to cut out and capture a missionary schooner sent to conciliate and convert him is one of the most amazing yarns ever told, and the anti-thetic variations of it that come from the opposite poles of traderdom and missionarydom are alone worth journeying to Tahiti to listen to.

As day broke on the 19th, the mist-wreathed peak of Orohena, the backbone of Tahiti, took form a point or two off the port bow, and a little later the jumbled skyline of Moorea began to appear in a similar position to starboard. The sun rose gorgeously behind a flank of the larger island, the blazing Southeast setting off in marvelous silhouette the matchless "Diadem," the crown jewel of all Tahiti's beauty. The "Diadem" is the name given to a row of little peaks occupying the divide between the two great volcanoes that dominate the East and West ends of the island. These are so symmetrically and evenly set that the most unimaginative cannot fail to see their resemblance to the points of a king's crown, a likeness all the more striking when each point is tipped with gold and the whole surmounted with a halo of light from the rising sun.

At 7 o'clock the tall, white pillar of the Point Venus light—so called because Captain Cook took his observations of the planet Venus from this promontory on June

3, 1769—could be discerned towering above the cocoanuts that engulfed its base, and an hour later it was abeam, with the Bay of Papeete opening up beyond. This name, meaning "Basket of Water," gives a comprehensive description of Tahiti's chief harbor. The bay itself is but half land-locked by the mainland, but across what would otherwise be a comparatively open roadstead runs a partially submerged reef, which, except for the narrowest of passages, completely cuts it off from sea. Inside is a mile of deep water and a shore so bold-to that the trading schooners tie up to the trees and load from and discharge to the bank.

At 8:30 we were off the entrance, and, as the sailing directions were plain and the marks unmistakable, decided to go in without a pilot. The wind, which we had carried on our port quarter since daybreak, was brought up abeam as we altered our course and headed into the passage. It blew strongly and steadily, and to the nine or ten-knot gait at which it was driving us was added the three or four-knot run of a flood tide. The yacht raced through the passage, as the Port Captain afterward tried to tell us in broken English, "like ze diable try catch her," and during all of our stay in the island we were constantly called on to deny the persistent rumor that she was equipped with power. Several who witnessed our entrance from the shore even went so far as to say that they distinctly saw blue smoke trailing off astern, a phenomenon which never came nearer to explanation than when Gus, a big Swede of the mate's watch who was at the wheel, admitted that he did "sware a leetle when she go joost lak hell" out of sheer excitement.

We anchored a couple of cable's lengths off the British Consulate, having made the 800 miles from Nuka Hiva in a little over three and three-quarters days, eleven hours of which were run under mainsail and forestaysail only in the lee of Rangaroa. The best previous record was between four and five days.

Situated well around on the leeward side of the island of Tahiti, with the great 8000-foot peak of Orohena cutting off all but stray gusts of the trade wind, Papeete



Trading Schooners Driven Ashore in Storm in Papeete Bay. Lurline Barely Escaped a Similar Fate

harbor is ordinarily as placid a bit of looped-in water as ever mirrored in its depths the silver disk of the tropical moon. Seaward the reef intercepts the surf as completely as does the mountain the wind from the opposite direction, and with the latter blowing from the Southeast, where it belongs, the inner bay is safe for the most sliver-like outriggers when the state of the weather outside keeps the mail-boat at its dock. The trading schooners, each with a couple of frizzled mooring lines run out to convenient cocoanut or buraos, lie right against the tottering sea-wall, and even the dock of the San Francisco and Auckland steamers is hardly more than a raised platform on the bank. No one seems to dream that there is ever going to be other than Southeast weather, and no one makes provision against anything else. Then some fine day a hurricane comes boring in from the North or West, and when it is over the survivors salvage pieces of ship out of the tops of the coco-trees, and perhaps some of them living a quarter of a mile inland, finding a schooner lodged in their taro patch, prop it up on an even keel and use it in place of the house of thatch that has been whisked away by the storm. In a few weeks every one but the missionary—who, by the way, is much given to picturing hell, not as a hot place, but as an island where the lost souls are endlessly tossed by æon-long hurricanes—has forgotten all about the storm, and is as liable as ever to be taken by surprise when the next one comes.

We reached Tahiti a little too early for hurricanes, but a kind of imitation one in the form of a Northwest squall was brought off for our benefit, which left very little to the imagination regarding what a real blow from that direction might mean. It is only the unexpected that is a serious menace to the careful skipper, as has been noted before, and it is in this respect that one of these sudden twisters, coming with a fierceness beyond description from the very last quarter it is looked for from, may work irreparable harm in spite of all precautions, where a hurricane, heralded for hours, perhaps days, by a falling barometer, may, in a large measure, be prepared for or avoided.

The thing occurred one evening shortly following our arrival in Papeete, just after three days of hard work had obliterated all traces of the internal and external wear and tear incident to the 3,000 miles of sailing the yacht had done since leaving Hawaii. She had received a new coat of white paint, decks had been scoured, hardwood freshly oiled and the brass work rubbed to the highest degree of resplendency. Sails were in covers, awnings up fore-and-aft, deck cushions out of their sea-jackets, and, in short, everything made ready to receive official calls. She was lying to her port anchor with twenty-five fathoms of chain out. A kedge astern held her head to the prevailing Southeast wind and kept her from swinging with the tide.

So empty of threat was the evening that the crew, with the exception of the single sailor whose turn it was to stand the anchor watch, had been given shore leave. The rest of us, tired from an afternoon of the ceremonious calling exigent upon the newcomers who would break the ice of officialdom in any French colony, were lounging on the deck and in the cockpit, glad of the chance to unstiffen and be quiet. It was an evening drowsy with soporific suggestiveness. Seaward the air was pulsing to the droning monotone of the surf on the outer reef, rising and falling at regular intervals like the heavy breathing of a tired sleeper. Landward, a



Type of Tahitian Canoe

league of liquid lullaby, the tiny wavelets of the bay tinkled on beach and sea-wall, and through the rondure of blue-black foliage which masked the village lights blinked sleepily, with here and there the tracery of a palm or banana frond showing in dark outline against the yellow rectangle of an open doorway. The yacht, rocking gently as a cradle, set the Japanese lanterns around the awnings nodding in languorous lines, and, above and beyond, clouds and stars rubbed lazily against each other in somnolent jumble. The spirit hand of the land breeze in the rigging was sounding the "stand-by" call for the watch of Morpheus.

The arms of the Sleep God must have enfolded with especial tenderness the hulking frame of Heinrich, the husky Teuton, who was standing anchor watch, for an inky splotch of cloud had grown from a speck on the North-Northeastern horizon to a bituminous blur that blotted out everything in that quarter from the zenith down before he raised his head from where he had pilLOWED it in his arms upon the ice chest and roused the ship with an explosive "Gott in Himmel." Simultaneously with that of Heinrich there was another explosion, the bursting of a Vial of Wrath, and promptly the big squall came charging in across the Motu Iti Quarantine Station on the reef, and began systematically scooping dry the bottom of the bay. Spreading like an inverted fan, it blotted out the stars to East and West, and, with the roar of a battery of quick-firers, swept down upon us in a solid wall of air and water, only a few short, nervous puffs of wind scurrying uneasily in advance.

The squall was swooping down to strike the yacht on her port quarter, realizing which, we hurriedly buoyed the line to the now useless kedge and cast it loose. So quiet was the water and air in the half minute-long interval before the wind came that the yacht lay motionless, half-broadside to the squall's advance, just as she had been stretched to the kedge, and when it struck her inertia was so great that her lee rail was hove well under before she began swinging. The lines of Japanese lanterns snapped in a half-dozen places and went streaming off to leeward like the tails of kites. The awning bellied monstrously and began splitting under the terrific uplift of the wind; and here and there lashings gave way and left corners threshing desperately for freer play.

There were no waves at first; only sheets of water torn from the top of the sea and thrown on ahead. The air was fairly clogged with spray, and the yacht deluged with water, fore and aft, as though she had no more

freeboard than a plank. The boats, which were made fast to booms run out on either side amidships, worked like the arms of Dutch windmills, and one of them, as the yacht reached the end of her cable, was tossed bodily over its boom to land bottom up and fill.

The yacht was driven across the arc of her cable sweep as a frightened broncho rushes to the end of his picket rope, and with a somewhat similar result. The anchor fouled and began dragging. So swiftly were we carried down the bay that it seemed inconceivable that there was any anchor at all at the end of the cable, and it was not till later that we definitely ascertained that the chain had not parted. We were heading—or rather backing—at an angle toward the sea-wall, and in a direction which allowed the yacht something over a quarter of a mile to go before she would crash into the line of schooners moored beyond the American Consulate, the grinding and pounding among which became distinctly audible as the interval decreased.

The port anchor was our only hope, and on the get-



Lurline from Veranda of U. S. Consulate at Papeete, Tahiti

ting over and letting go of this the Commodore and Heinrich began furiously working, while the Weather Observer, ably assisted by the ladies, made vigorous endeavor to reduce the awning, the great spread of which was acting as a sail in driving the yacht the quicker to an apparently inevitable doom. That there would be ample chance to get ashore in safety, no one had much doubt, but more indubitable still appeared the fact that we were scheduled to have a graphic illustration of the meaning of that commonest of South Sea expressions, "piling up on the beach."

The anchor was let go and the awning brought to a fashion of a furl about the same time, and five white faces, peering anxiously shoreward for results, only paled the more as the foam-white belt that marked the line of the submerged sea-wall continued to grow perceptibly nearer. Stars were appearing under the squall along the Northern horizon, but the center of it was now overhead and the wind had increased to a force before which the coco-trees along the bank were bending to the

ground and now and then snapping off with sharp, explosive detonations. The clang of bells resounded through the town, summoning aid for the pounding schooners along the sea-wall, and in sheltered corners ashore could be seen black knots of men gesticulating wildly in the light of lanterns.

We were now a scant fifty feet from the wall in front of the U. S. Consulate, and perhaps twice that distance from the first of the jumble of schooners, the big Eimoo, the largest and fastest trader that sailed from Tahiti. The seas were streaming over her as though she was a surf-beaten rock on a stretch of ironbound coast, but in the smother on her forward deck some of her crew could be seen surging round the capstan in a frantic endeavor to haul her off from the wall. From the ships beyond came a babel of shoutings that rose above the grind and pound of keels, and presently these keyed higher into yells of excitement and dismay as one of the schooners—luckily the last in line—broke loose and began battering to pieces against the barrier of stone.

There was nothing more to be done. Jewelry and other portable valuables had been tossed into a canvas sack, and the ladies, smothered in life-preservers, hurriedly coached as to the proper manner of jumping ashore from the stern of a grounded yacht. White figures had appeared clinging to the pillars of the Consulate, ready—as we afterwards learned—to rush to our aid as the schooner struck. There was still some question as to whether it was Eimoo we were going to bump first, or the wall; or first the one, and then, in company with her, the other, and while this question was still in the balance the rain came, the wind and sea fell sufficiently to allow the anchors to hold, and the worst was all over in a minute.

The squall had blown itself out not a moment too soon, for when the anchors finally stopped dragging one could have stood in the cockpit and skimmed a biscuit over the port quarter to the steps of the Consulate, while flung to starboard at a similar angle it would have sailed to the deck of Eimoo. Now we were safe until another squall blew up, in which case, especially if it came from anywhere to the East of North, the twenty-five fathoms of chain out to each of the anchors would be enough to allow us to swing around onto the sea-wall. Plainly it was imperative that the yacht be worked into a safer position, and that without delay.

The sky was darkening again to the North as the Weather Observer was put ashore with orders not to return without the crew, or a working equivalent. The town was in an uproar, and the impracticability of rounding up a "working equivalent" of the crew was soon apparent. Two schooners and a sloop were loose and pounding to pieces upon the wall, and these had first claim to volunteer aid. The gendarmarie, assisted by soldiers from the barracks, was going about the streets and into the clubs and restaurants requisitioning a relief force, and Lurline's unfortunate scout was kept at his wit's end dodging and avoiding service with one of these press gangs.

Finally the crew was run to cover at the end of a fragrant tunnel of blossoming burao and bread-fruit. Bill, the light-footed Dane of the port watch, the axis of a vortex of capering vahines, was leaping in the maddest of hornpipes, to the music of an accordion, with bugle obligato by Perkins. Big, blonde Gus, surrounded by another nimbus of tropic loveliness, was draining a newly-cracked cocoanut as he would have tossed off a seidel of

lager, and Victor, the mate, a red hibiscus behind each ear, was shifting a cat's cradle from his rack of stubby, red fingers to a frame of slender brown ones. It was a shame to put an end to their innocent fun, but the North was blackening again, and—well, a sailor learns to take his pleasure as a patron of a railway lunch counter does his food, in hasty gulps. Besides, there would probably be other evenings ashore, and the way of a stranger in Tahiti to a session of song and dance is the turning to the first open door.

There was a sinister tower of cloud piled up beyond the reef by the time the crew was again aboard the yacht, but its east side was showing blacker than its west, and before long we had the satisfaction of seeing it bear off in that direction and disappear with heavy roarings behind the end of Point Venus. The rest of the night we were left in peace to haul off out of danger.

For the last two or three hundred yards the yacht had backed in a course that only lacked a few degrees of being parallel to the sea-wall, so that the anchors were but little farther from the shore than the schooner herself. "Hauling off" therefore, was a tedious and not entirely simple proceeding. We first hove short on the starboard anchor, broke it out and brought it just awash. Several lashings were then passed through its ring and round and round the port boat, just aft the beam, after which a line from the yacht was made fast to the anchor and the shackle knocked off. This left it suspended in the water in a manner best calculated to trim the boat and not hamper the rowers.

While the boat pulled offshore and dropped the starboard anchor the port was broken out and catted. Then the line to the former was put on the winch and the yacht hauled offshore as far as possible. Here the port anchor was let go, following which the starboard was hove up, re-shackled and dropped again. The next morning, taking advantage of a favorable slant of wind, we dropped to within a hundred feet of the sea-wall and ran mooring lines to the butts of a couple of old cannon which projected from the coral, a berth which proved to be both safe and convenient.

The island of Tahiti has been the best known, or rather the most talked about, point in the South Pacific since those latitudes have been added to the map of the world. From the time the mutiny of the *Bounty* furnished the theme for Byron's "Island," and later events produced Melville's charming "Eimoo" and Pierre Loti's idyllic "Rarahue," down to the more numerous but somewhat less finished efforts of recent time, Tahiti has been the inspiration of more literary endeavor than all the rest of Polynesia combined. Undoubtedly it has had more than its share of publicity—latterly, largely because it is so easily and comfortably reached from both America and Australia—but the fact remains that it is uniquely and unmixedly charming, and perhaps better fitted to minister to the creature comforts of the visitor than any of its sister islands. Civilization in the form of the galvanized iron roof, the glass window, the missionary, the Mother Hubbard wrapper and the whiskey bottle, has thrown its coldly corrective influence over the native life of the island, but if it is the Kanaka in his pristine purity that one wants, Moorea and Bora Bora, or the Paumotos and Marquesas, are close at hand, and these the venture-some may reach by trading schooners.

Socially, Papeete, at least as far as red tape and ceremony go, is the most finished capital of the South Pacific. These things are, in fact, rather overdone for so remote a

tropical outpost, and the tiresome system of precedence set up by French officialdom, and the constant danger incident to bringing together those within and beyond the pale, make the bluff informality of German Apia and the open hospitality of British Suva shine brightly indeed by contrast. The non-official residents of the island, the traders and the planters, are the same kindly, easy-going folk that one finds in all the other groups. The "Cercle Colonial" is the headquarters of French officialdom, and their respective consulates those of American and British residents and visitors. The American Consulate is a low, comfortable structure of galvanized iron and wood, "hurricane-proofed" with several guys of stout cable. It was built in 1835, and is the oldest consular establishment owned by the American Government.

Chief item on the visitor's program in Tahiti is the hundred-mile drive around the island. The roads are bad most of the way, and the vehicles all the way, but the ride itself unfolds such an unending panorama of sea and surf and lagoon; of beach and reef; of mountain, cliff and crag; of torrent, cascade and waterfall, and of reckless, riotous, onrushing tropical vegetation, as is found along no other similar stretch of wagon road in the



Lurline's Party at Luncheon with One of the Native Chiefs at Tahiti

world. Our drive in the company of Consul William Doty and his sister, on which we were entertained each day by a different district chief with specially arranged surf-rides, feasts, dances and himines, was one long week of new and delightful sensations. At Tautira, the village second in importance to Papeete, we were the guest for two days of the suave and dignified old Ori, a chief who was once Stevenson's host for a number of weeks, and who, on occasion, fairly bubbled with piquant anecdotes of the great novelist. Returning down the leeward side of the island, we spent a day and a night with the wealthy Tetua-nui in a great comfortable two-story house that might have passed for a Southern home of the ante-bellum days, and also found time to accept a luncheon invitation from the scholarly Taute Salmon, university graduate and, on the occasion of his trip abroad, a fêted guest of Washington and Paris.

Friday, the 13th of May, was set for the day of departure for Tutuila, but the unlucky coincidence of the day of week and month was responsible for a postponement, and the loss of a fair wind out of the harbor Saturday morning a fitful N.W. wind blowing directly down the passage made it impossible to get underway

without running a strong chance of ending up on the beach. After a vain wait of a couple of hours for a shift of wind a line was finally carried to the mail-boat's buoy, out to which the yacht was laboriously hauled by winding in on the winches. Letting go here at noon we sailed down the bay with a beam wind, dipping in turn to the flags of the consulates and the French gunboat, *Zelee*.

As we hauled up to thread the entrance the wind was brought dead ahead, and for the next fifteen minutes the yacht was put about so often in the scant working room of the narrow passage that the sails were hardly filled on one tack before, with shoaling water and an imminent surf, it was necessary to go on the other. The trading schooners make it a rule never to attempt the passage with a head wind, but *Lurline's* superiority in nosing into the wind, as well as the greater ease with which she handled, made comparatively simple a performance that for the others would have been really hazardous. At 12:30 p. m. we were clear of the harbor, and at 2 o'clock took departure, Point Venus Light bearing S.E. by S., distant eight miles.

Close-hauled to a baffling N.W. wind, a course of due N. was sailed until 10 o'clock, when the yacht was put about to a Westerly course for the rest of the night, her speed averaging less than six miles an hour. Tahiti was still visible under a dense cloud rack at daybreak, while the Northern side of Moorea presented a crazy-looking row of sharp pinnacles. Toward noon Neaheu was sighted, Raiatea almost immediately appearing beyond. At sunset all the leeward islands were in sight, Tahaa and Bora Bora showing up beyond Raiatea. Between the two former a sharp sail-like rock appeared, the tips of the pinnacles of Moorea were still visible to the South, while above and beyond them a heavy cloud bank betrayed the position of the veiled Orohena.

The North line of Bora Bora showed forward of the beam at daylight of the 16th, our course being due West. At 8 o'clock Tubai reared a fogged outline to the South, and just across its leeward end the hazy form of Marua, the most Westward of the Societies, was visible. Marua and the skyline of the great cliff of Bora Bora held places on the horizon till sunset and with darkness we saw the last of the French islands.

The wind, which had been light for the last two days, had fallen away entirely by the morning of the 17th, the calm for the next eighteen hours being so complete that the yacht had not enough way to straighten out the

log-line. From midnight of the 16th to that of the 17th but 26 miles were covered, most of that being made in one watch. By morning of the 18th, however, the rene-gade tradewind again began asserting itself, to stand faithfully by nearly all the rest of the way to the Samoas.

The coming of the tradewind was coincident with another happening, which served to illustrate graphically the dangers that little-navigated seas hold for the most careful skippers. From the observations of the 17th it appeared that Bellinghausen Island, a low uninhabited reef of considerable extent, lay directly upon our course to Tutuila, and at a distance which made it probable that we would come up to it toward the end of the night. Findlay's Directory gave warning of a Southerly setting current of a mile an hour, allowing for which our course was so altered as to give the dangerous reef an amply wide berth. Our course, we figured, would carry us from 10 to 20 miles North of the island in spite of the current, but at midnight, to make assurance doubly sure, it was decided to edge still farther to the North and the course was altered to N.W. by W. This we were to hold until daybreak and then, the danger being past, head off due West for Tutuila again. Of course we would pass out of sight and sound of the island, we thought, but that was the safest way, and there wouldn't be much to see anyhow.

Just before daybreak, as the yacht, driven by the new-found tradewind, was settling contentedly down to an easy eight knots, the excited hail of "Breakers on the lee bow!" brought every one on deck, and presently, out of the dissolving mist ahead, we saw long lines of surf tumbling over a submerged reef, and beyond low drifts of sand scantily covered with scrubby cocoanuts and pandanus. There was no need of altering our course. Still heading in a direction which we had figured would carry us at least 20 miles to the North of Bellinghausen, we slipped quietly by, a mile off its sinister Southern line, before hauling up again for Tutuila. Every point we had altered our course had only brought us nearer the danger we had sought to avoid, and the chances are, if we had made assurance a bit surer, that, with the added speed of the incidental slant of wind, the yacht would have sailed uncomfortably near the breakers before daylight.

There was nothing wrong with our reckoning on this occasion except the allowance made for current, and this was figured according to the only authority available. Probably not an average of one ship a year makes the



Tahitians with Plantains. Gift of a Native Chief to *Lurline*

voyage from the Societies to the Samoas, and only the occasional government vessel keeps a record that is likely to be reflected on the charts. The Southerly set of current past the Western end of the Societies is, at least in the Fall months, certainly much greater than Findlay estimates it.

With mainsail and foresail wing-and-wing and both gaff topsails set, good speed was made all day of the 18th. Morning of the 19th found the wind dead astern, however, and this, in combination with an exasperating swell which set in from the South for no apparent reason whatever, and made it impossible to run wing-and-wing, compelled us to steer a point wide of our course of due West. It was our original intention to rig up a square foresail for this run before the trade from Tahiti to Samoa, but the baffling head winds of the first few days made the use of such a sail impossible, and the advantage was deemed hardly worth the trouble for the few days that remained.

We learned later that the heavy seas from the South were the result of a tremendous gale that swept the Pacific beyond the Tropic of Capricorn a few days previously. Beam seas and a strong following wind make about the most uncomfortable combination a fore-and-aft can encounter, and the next four days were lively ones aboard Lurline. A sea would come rolling down in a great sky-scraping ridge of pea green and heel the yacht to starboard until the mainboom dipped into the water and buckled under the strain like a rod before the first rush of a ten-pound salmon. Then it would pass on while the yacht tumbled off its back and rolled her

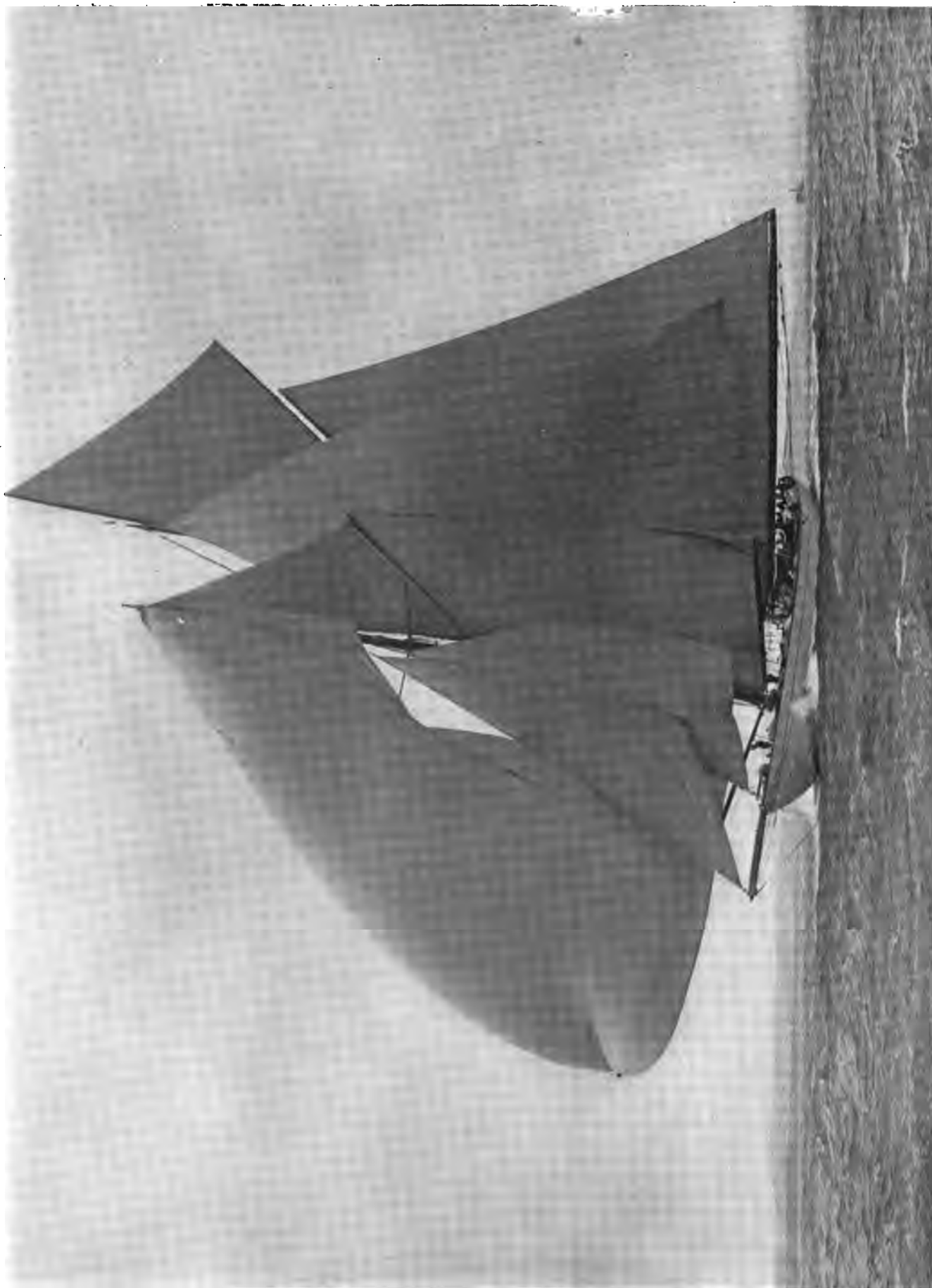
port rail under just in time to dip a deck full out of the next wave. Much of the time the foresail was lowered with the boom hauled amidships, and the mainsail, double-reefed, carried to starboard. The jib and forestaysail were usually set but rendered little service, most of such wind as they caught being shaken out in the roll.

Under these circumstances very creditable speed was made. The run to noon of the 19th was 195 miles, and for the three following days 193, 174 and 175 miles, respectively. The wear and tear on sails and sheets and halyards was very great, however. On the 21st the fore peak halyard chafed through at noon, and at 10 p. m. of the same day the forestaysail sheet came to similar grief. Nothing else carried away before we reached port, but the steady banging of these four days made a general overhauling of the rigging necessary before we were in shape to put to sea again from Pago Pago.

The several small islands which constitute the Manua division of the Samoan group were sighted to the N.E. at daybreak of the 23d. The peaks of Tutuila, distant 40 miles, came above the horizon at 4 p. m. of the same day, but as there was no hope of reaching Pago Pago before dark in the light airs prevailing, canvas was shortened to mainsail and forestaysail and the night spent in standing off and on. Morning of the 24th found us 20 miles offshore, and for several hours the yacht scarcely made steerageway in an almost dead calm. Toward noon a light Easterly breeze sprang up, and taking advantage of every puff we managed to worry in through the entrance and up the bay to an anchorage by 4 o'clock in the afternoon.

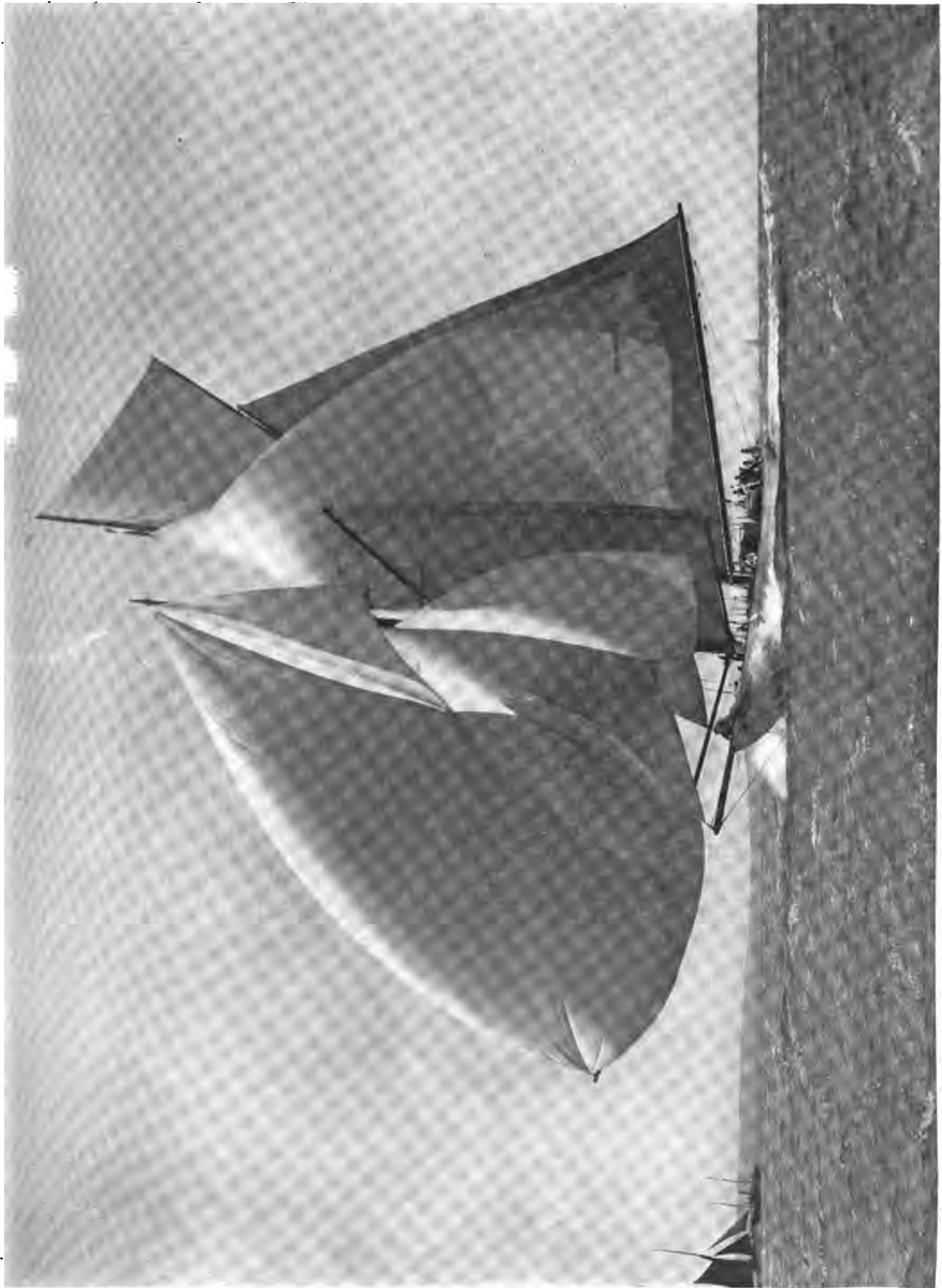
(To be Continued.)





Photos by A. E. Beken & Son, Cowes, I. W.

Germania Racing for the Emperor's Cup at Cowes, 1910



Susanne Racing for the Emperor's Cup at Cowes, 1910

HOW TO BUILD A GLIDER, KESTREL

Walter M. Bieling



CONSULT a natural history and you will be surprised perhaps to learn that among the hawk family there is a species, the "Kestrel," which possesses the faculty of remaining almost stationary in mid-air in practically the same spot without making the slightest movement so far as its wings are concerned. Examined through a glass the kestrel will resemble nothing so much as a bird-shaped kite and the only perceptible movement is a continual shivering of its

wings, and an occasional movement of its widely spread tail to meet the varying changes of wind. Fix in your mind's eye such a bird, then also in your mind's eye, observe the bird to drop its head slightly and without the slightest movement start forward and glide, not fly, directly into the wind, and you have a lifelike movement of its inanimate copy, the glider.

Another example of Nature's handiwork in the gliding line may be seen in the common so-called flying fish; here we have the true glider. The fish depends solely on its momentum as it dashes from the top of a wave, to carry it forward, and upon its rigidly extended side fins

for its support when underway, and, as a matter of fact, any one who has seen a Blériot monoplane in action will be at once struck with its wonderful resemblance, I am sure, to the common flying fish, if that person has ever seen a flying fish fly or rather glide along the surface of the water.

The ordinary glider may be compared to a box-kite



View of Glider from Above

familiar to every boy. Take such a kite and in a fairly strong breeze you will find that it will easily lift a small weight; double its size and you will find it will lift a very much heavier weight; make it 20 feet wide and you will find that it will lift a man very easily. This much having been proven, the theory of the glider has been partially learned, and since the construction of one is so simple any one with a mechanical bent can construct a



Photos by Levick

Front View of the Glider Finished and Ready for Trial



Rear View of Glider

machine and with a little patience learn to fly it, or rather to glide. It is not my desire to state or even intimate that a glider in the hands of any person will permit him to fly any more than a bicycle may be ridden at the first try, or that a balancing pole makes a tight-rope walker, or a bathing suit a swimmer, but gliding is very much more simple than is generally understood, and as this seems to be the age of flying, I set forth in the following pages

the construction of a machine which has successfully flown, and in one instance by a person who knew absolutely nothing about the science of flying. The machine being almost perfectly balanced may be flown for a considerable distance in a 10 to 20-mile breeze by any person of average intelligence after some preliminary practice.

To those persons who have mastered the art of sailing a boat the task will be greatly simplified; it is in a sense



Side View of Glider

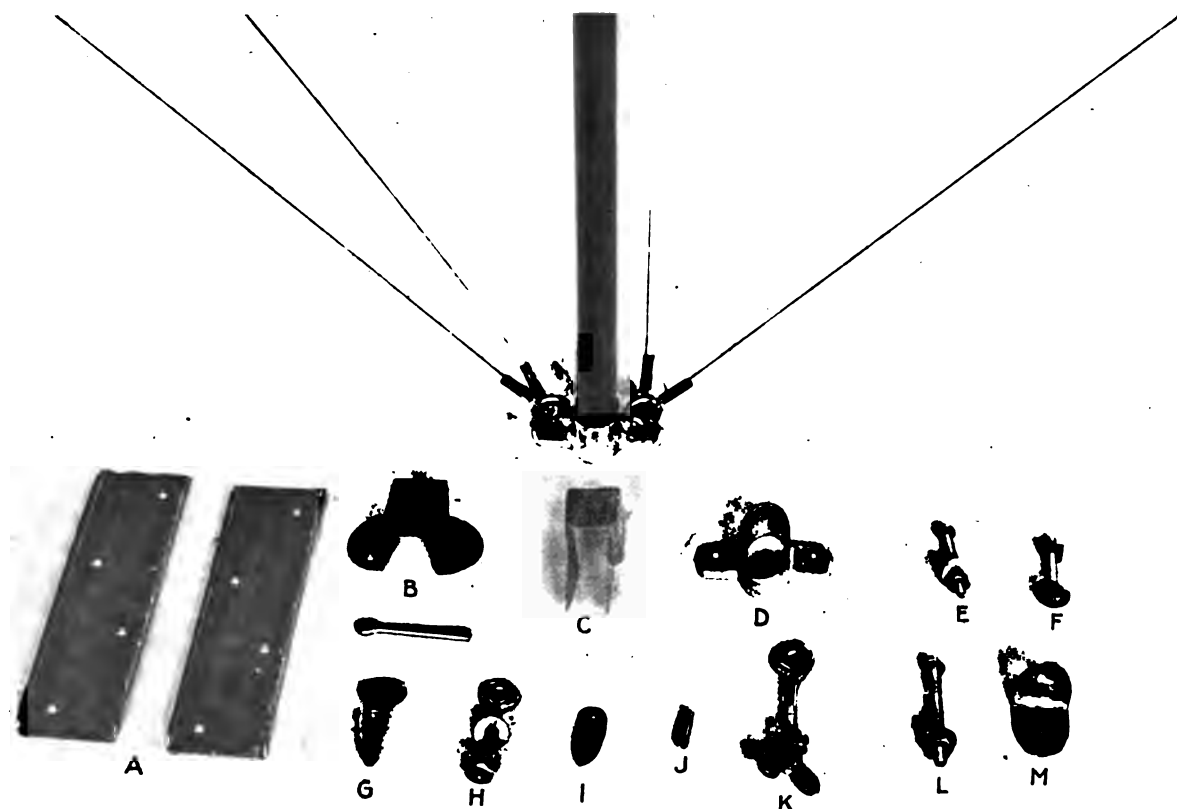
THE RUDDER

"going to windward" and is something that cannot readily be explained. Study in books a thousand years the art of "beating to windward" and then note the results: wouldn't they be sad? So much for gliding. It is hard to explain but easy to accomplish, and incidentally, it was, and is, unquestionably the first step towards actual flight. One successful glide and the novice will feel that flying is as simple as walking, but it may be added that the successful glide may not take place on the first few trials.

The machine shown herewith is 20 feet long by $4\frac{1}{2}$ feet wide, the decks being 4 feet apart, and the whole outfit complete weighs 54 lb. As an idea of its probable cost it may be stated that as the manufacturer sells it complete for \$75, it naturally should be constructed by the amateur for considerably less. The fittings on the

outfit may be knocked down and packed into a crate about 11 feet by 5 feet by 1 foot. The general details of construction are plainly shown in the accompanying photographs and drawings, but for the guidance of the prospective builder, I will explain the order of building which goes somewhat as follows:

To construct a glider it is necessary to provide sufficient timber for eight thwartship or main beams not less than 10 feet in length and of the thickness shown, about $1\frac{1}{2}$ by $\frac{3}{4}$ inch. Twelve uprights, each 4 feet long when finished and about $1\frac{3}{8}$ by $\frac{5}{8}$ inch in section. Two tail supports 9 feet in length and about $\frac{3}{4}$ inch square, and thirty-four pieces of thin stuff, clear and strong, for the construction of the ribs. Also there is required eight pieces somewhat heavier than the ribs for holding the main beams together at the ends, and



Detail View of Metal Fittings of Glider

machine shown may be purchased, or if the builder desires he can make them himself; the principal necessities of the construction being some tough clear spruce, a few pieces of cypress, about a pound of No. 16 piano wire and enough unbleached muslin, carefully sewn into shape by a kind mother or sister, to cover the two decks and rudder.

It is essential that the frame be constructed of selected spruce free and clear of knots, and the cloth should be of strong muslin fastened to the frame by means of eyelets slipped over brass nails, the heads of which extend slightly from the wood. The main frame is detachable by means of joints in the center. The uprights are not permanently secured but are inserted in sockets and held in place by means of wire stays. Thus the whole

also two strong pieces by means of which the outfit is held when in flight, sizes of which members have all been given in the drawings. The muslin necessary may be obtained of sufficient width to make the decks in one piece and in all takes about 200 square feet of cloth, or in other words a piece about 40 feet long and 5 feet wide. Above is shown an illustration of all the fittings necessary for the construction of the machine herewith described.

In the construction of a glider I would suggest that the builder get out all the woodwork in advance as it will save time and trouble later on. By consulting the various drawings and the list of material, the exact amount of timber and the exact dimensions may be determined. The drawings also show the full-size sections

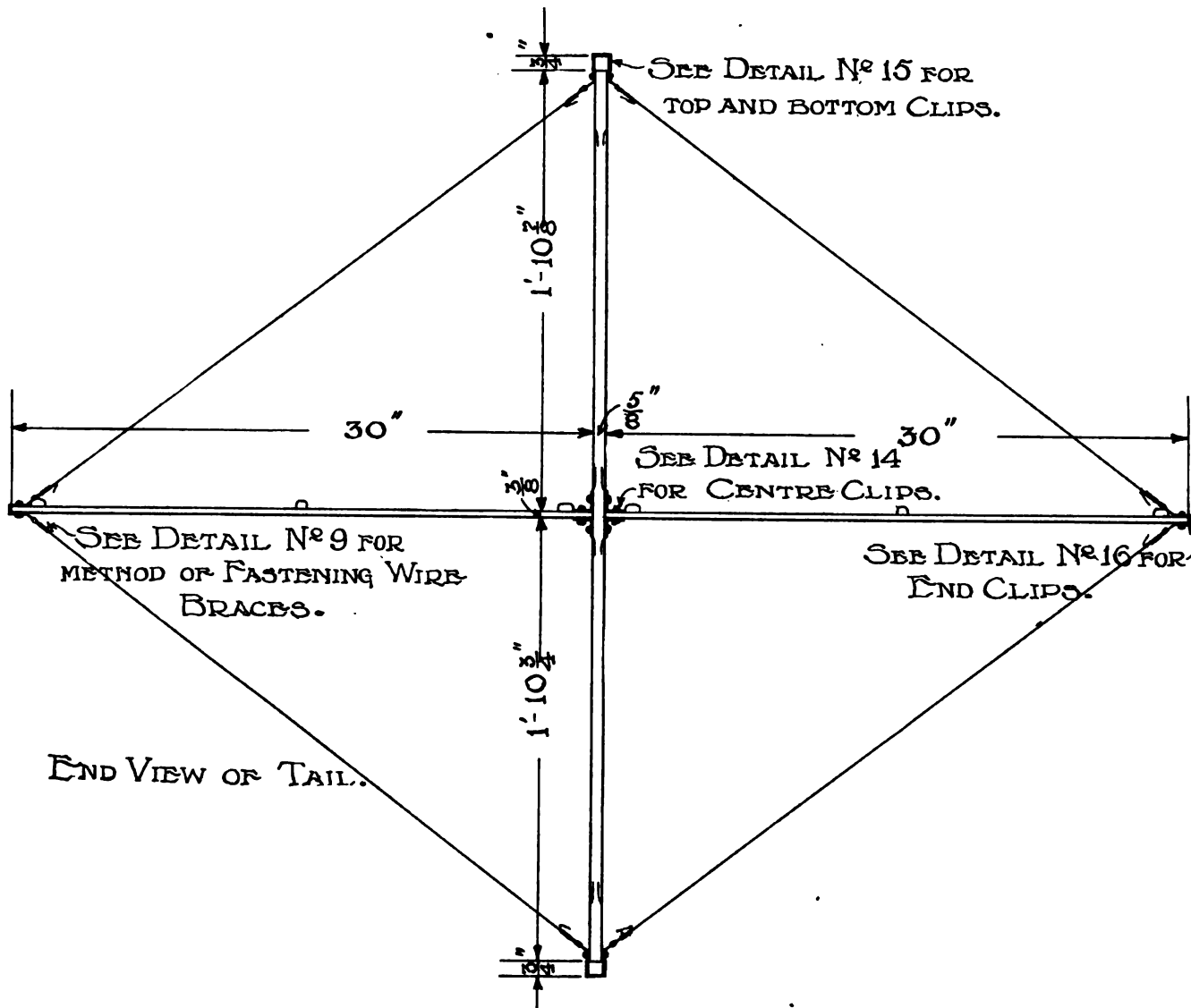
work knows how to construct a small steam box, but for the sake of the one person, perhaps, who has not seen one, I will state that a box about 5 feet long and 6 inches square with one end closed up will serve the purpose. Get hold of an old boiler or water kettle, get a piece of rubber pipe and put one end over the spout of the kettle, if one is used, and lead the other end into the steam box at any point, preferably through a hole bored in the closed end. After the pieces to be bent have been placed in the steam box, the other end may be stuffed with canvas or rags, and the outfit is ready for business. If any difficulty is experienced in bending the ribs it is a simple matter to construct a wooden mould, bend them over good and hot, tack on a small piece of scantling to hold them in place a while, and there probably will be no trouble as the pieces are very light and consequently easy to bend. Having completed the wooden or bridge part of the fabric, it is up to the builder to decide whether or not he will purchase or construct the fittings necessary for fastening the parts together. With the exception of the castings for holding the uprights in place any person handy with tools could cut the metal pieces out of sheet steel.

The bolts and the other stock stuff can, of course, be purchased at any good hardware store.

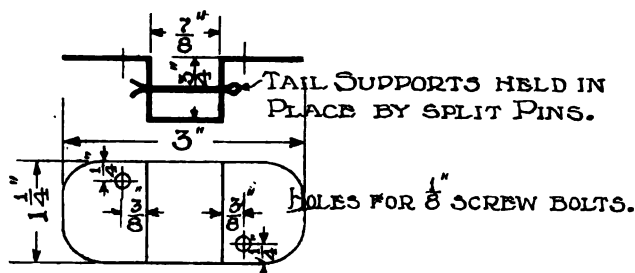
The description to this point has been of what might be termed the heavy work only, and as to the fastening of the various members, it may be stated from actual experience that it is infinitely more simple to grasp the idea from sketches carefully made from the finished machine, than from any long-winded description. The drawings so far as was possible are on full pages and I would suggest that the prospective builder secure two copies of the magazine and paste the drawings on heavy cardboard to be tacked over the work bench for frequent consultation.

From the plans, showing the machine in various stages of completion, the builder may refresh his memory and check his labors as he goes along, and it will be noted that the various joints and fastenings are numbered, and reference made in each case to detailed drawings which tell the story, and for further convenience I give a brief description of the assembling of the glider, furnished by Messrs. Wittemann, the builders of the particular machine described.

"First take main beams and fasten ribs to same at



Detail of Tail Framing and Staying



№ 11. CLIPS FOR INNER END
OF TAIL SUPPORTS.
MAKE TWO OF THIN STEEL.

proper distance, as shown in illustration. Then bolt the section of planes together at centers with the steel clamps, then after having measured, cut and sewn your cloth to size, allowing very little for stretch, tack same or secure with pins and grommets, to forward edge of sections. Then fasten on sides, and finally stretch and fasten on rear edge. Finish by sewing ribs with large stitches, to light ribs.

"Put on the castings for uprights, and after having done this, line up lower plane on floor, insert uprights, put on upper plane, and then proceed to put in wires, taking care that the framing is held square and wires are stretched as tight as possible. Next put on the arm supports and clamps for fastening rudder.

"Then make up tail in similar manner as the planes. Fasten the tail supports to main frame by the clamps and finally line up the tail by crossing cords from tail to main frame and fasten to second uprights from end at the eyebolts by means of snap-hooks.

"The wires are fastened in this manner, viz., first insert wire into ferrule, then pass through eyebolt, again through ferrule, bend end of wire about $\frac{3}{4}$ inch parallel with end, then pull tight. To fasten upper end, first insert wire into ferrule, pass wire through eyebolt, having first cut wire to length, allowing a few inches for to get a good grip with pliers. Then pull tight, slip ferrule as close to eyebolt as possible, and then bend over. The lower frame is held to floor by blocks of wood and upper is set with plumb bob while inserting wires."

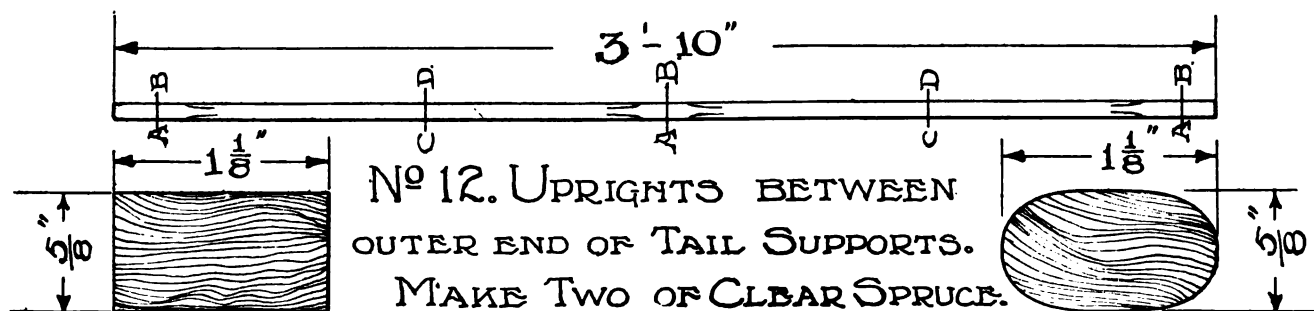
For the convenience of the builder there is shown in the plate on page 22 the fittings of the machine described, which may be purchased of Messrs. C. & A. Wittemann, of Ocean Terrace and Little Clove Road, Staten Island, N. Y., or made by the builder himself. Of course, it is not necessary to adhere strictly to the

particular style of fastenings shown and described, but as the glider in action is subjected to considerable straining, it is absolutely necessary that the fastenings be sufficiently strong to ensure the machine being held rigidly in shape.

The principal fastenings are mentioned by letter in the List of Material and in place on the machine work out as follows. The only castings on the machine and perhaps the hardest fittings to make are the sockets for holding the upright members (Fig. 2) in place, and marked D on the plate. In the drawings this fitting is shown in place on the front view of machine on page 25 and in Fig. 6 of the detailed drawings. All the fittings and connections are thus shown in place, and in detail, and no trouble should be experienced on this score. Continuing: Letter A, the strap for fastening the main beams together in center, will be found in the detail drawings under Fig. 5; note that general shape and full dimensions are shown in drawings. Letter B, clamps for inner end of tail supports in Fig. 11. Letter C, Fig. 15, clamps for upright tail supports, and on Fig. 16 is shown a clip for fastening the ends of horizontal tail members. Letter M shows small clip for fastening horizontal and vertical tails together as illustrated in Fig. 14.

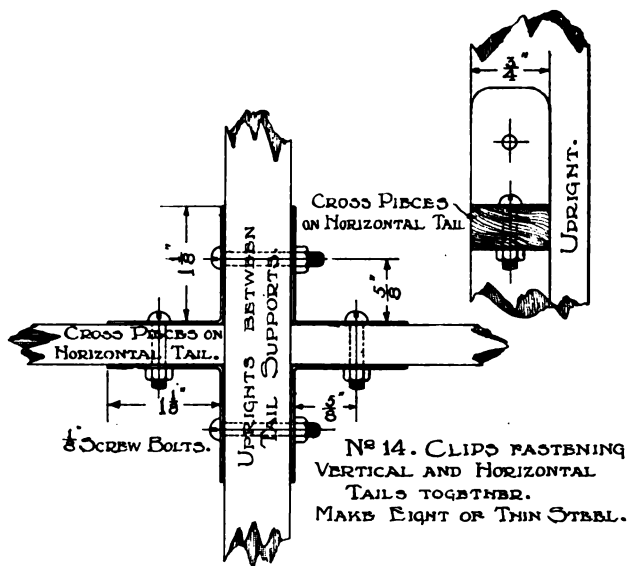
The various bolts necessary are fully shown and described in the detailed drawings and need no further description, but the fastening of the muslin, as shown in Figs. 17 and 18 perhaps needs a little explanation. In getting out the cloth part of the machine by all means consult a sailmaker, awning maker, dressmaker, shoemaker, mother, aunt or sister, because only one of this brand of artisan can be of assistance if you feel that assistance is necessary. Measure, cut and sew your cloth to size and either tack it on the forward edge of forward main beams or preferably use the eyelet and pin method shown. This system was adopted by the manufacturer as it permits of quick assembling and disassembling for shipment, and also facilitates quick repairs. If the eyelets are to be used consult the shoemaker or dressmaker, and get posted on the subject of eyelets or grommets, or purchase a thousand of them at 50 cents and put them in yourself. When placing escutcheon pins (round-headed brass nail with raised head) allow the head to project enough to permit grommets to easily hook over the edge as shown in Figs. 17-19.

The drawings of machine on page 25, front view, show clearly the method of wire bracing or staying, and it will be seen that the upper part of each upright member is secured to the lower part of another member.

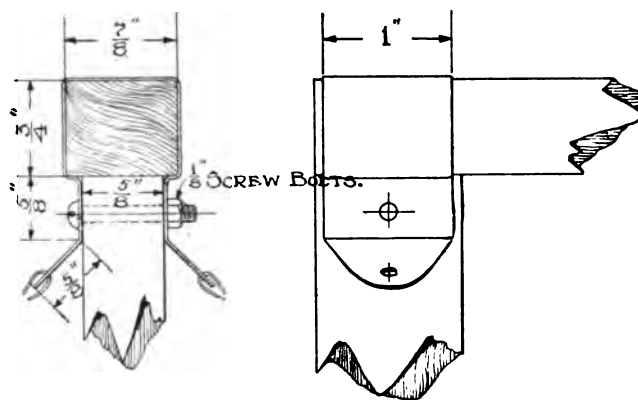


SECTION AT A-B.
FULL SIZE.

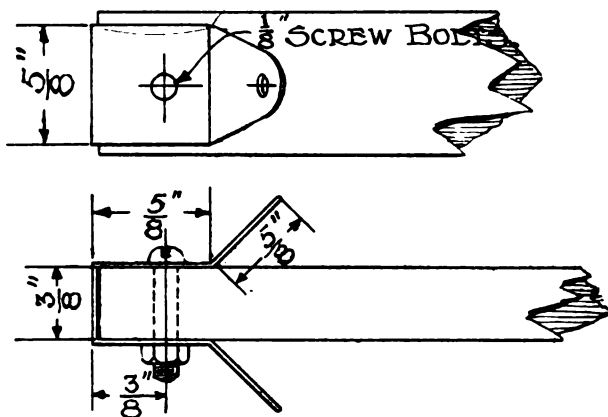
SECTION AT C-D.
FULL SIZE.



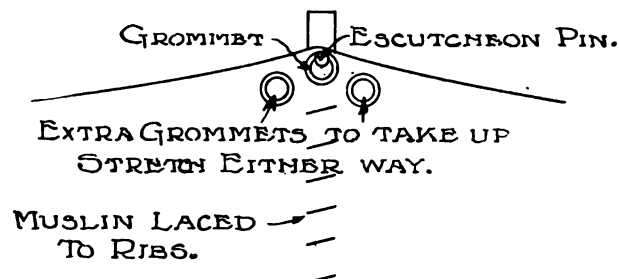
No 14. CLIPS FASTENING VERTICAL AND HORIZONTAL TAILS TOGETHER. MAKE EIGHT OF THIN STEEL.



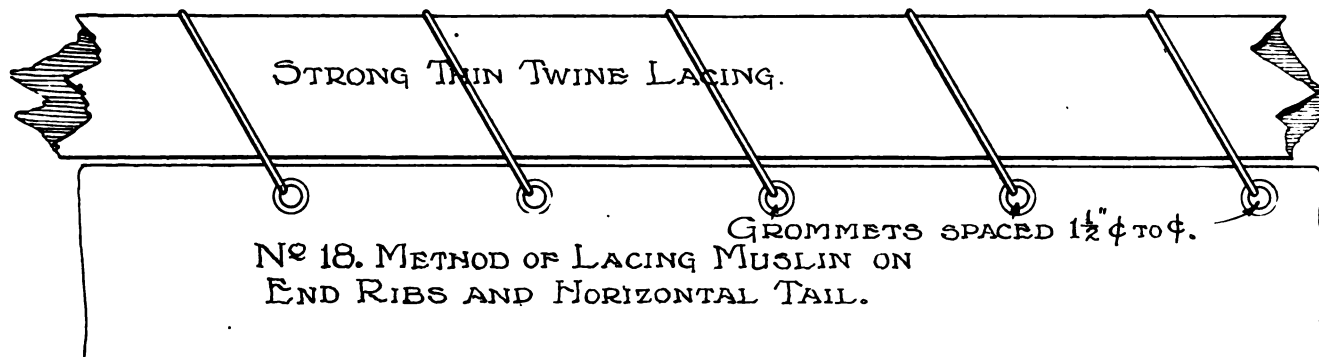
No 15. CLIPS ON TOP AND BOTTOM OF VERTICAL TAIL. MAKE FOUR OF THIN STEEL.



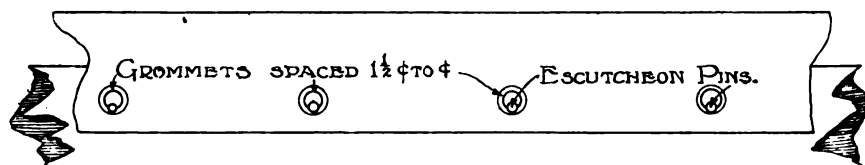
No 16. CLIPS FOR ENDS OF HORIZONTAL TAILS. MAKE FOUR OF THIN STEEL.



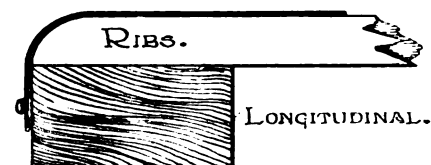
No 19. METHOD OF FASTENING MUSLIN TO ENDS OF RIBS.



No 18. METHOD OF LACING MUSLIN ON END RIBS AND HORIZONTAL TAIL.



No 17. METHOD OF FASTENING MUSLIN ON FORWARD SIDE OF PLANES AND HORIZONTAL TAIL.



Constructional Details of Glider

In all there are sixteen thwartship stays, all secured as shown in Fig. 9 and in the view of one of the uprights shown in the plate of fittings. Of the fore-and-aft stays of the main part of the machine there are a pair to every pair of uprights, twelve in all, as shown in side view of machine on page 25.

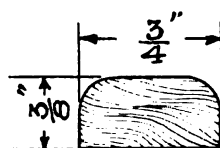
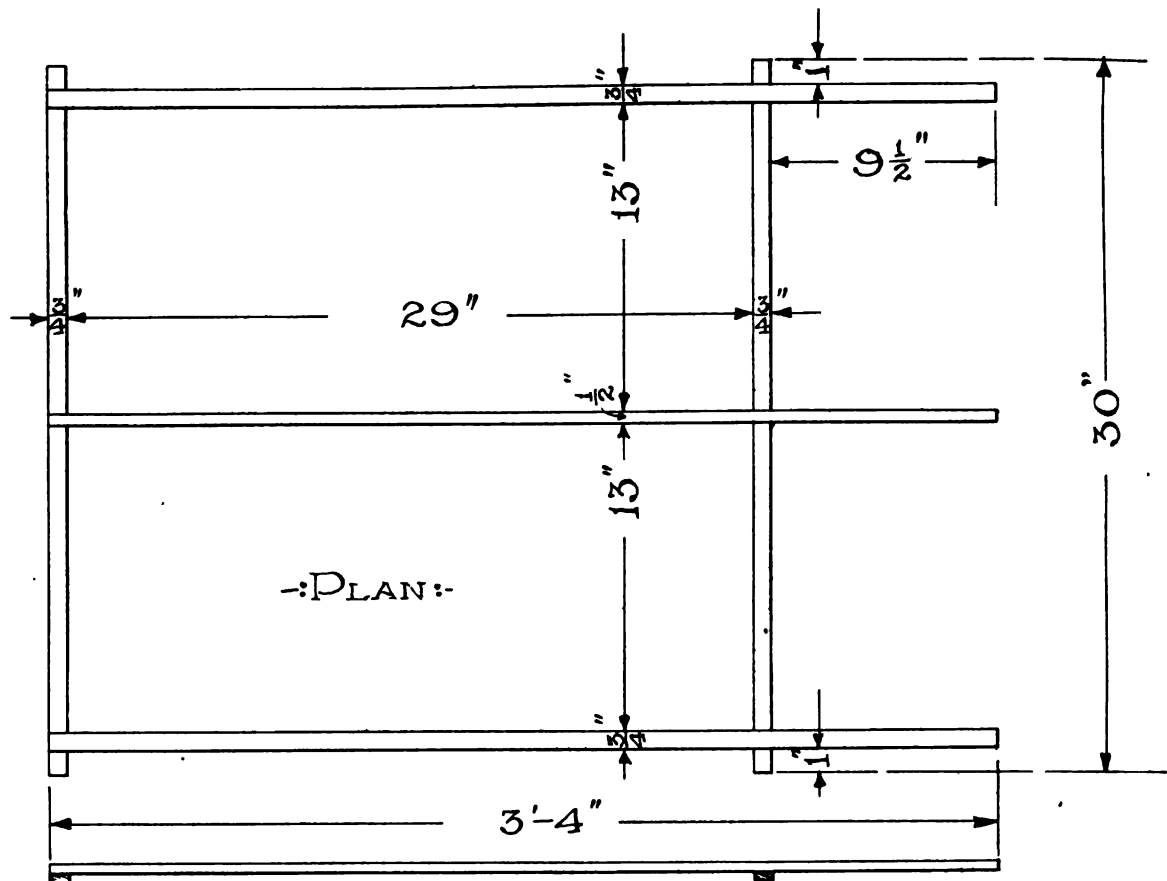
In the side view of machine, it will be noted that the rudder is secured to the main part of the machine by the two tail members mentioned previously, and shown on detail Fig. 10, also to further secure the tail, but to allow of some play, two light strong cords are carried from the top of forward end of rudder to base of the second upright aft member of the frame on each side. From the bottom of the forward part of rudder similar cords are secured to the top of the members mentioned as is clearly shown in the photo showing the side view of glider.

The material necessary to construct the glider including the wooden parts already mentioned and described is set forth and enumerated in the following table. As the actual place to use each bolt will have to be worked out by the builder himself from the plans, detail drawings, and actual work, I will conclude by stating that if any part of the work has not been plainly explained or if the builder strikes unforeseen constructional snags, the writer, with the aid of the builders of the machine, will be pleased to endeavor to smooth out the wrinkles.

As to the actual handling of Kestrel in flight by the beginner and manner of maneuvering the ship, that is of sufficient importance to be incorporated in a separate article, and, if the experimenter is not killed in the meantime, will be described in the next issue.

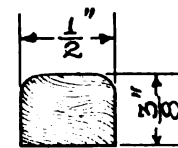
LIST OF MATERIAL FOR GLIDER

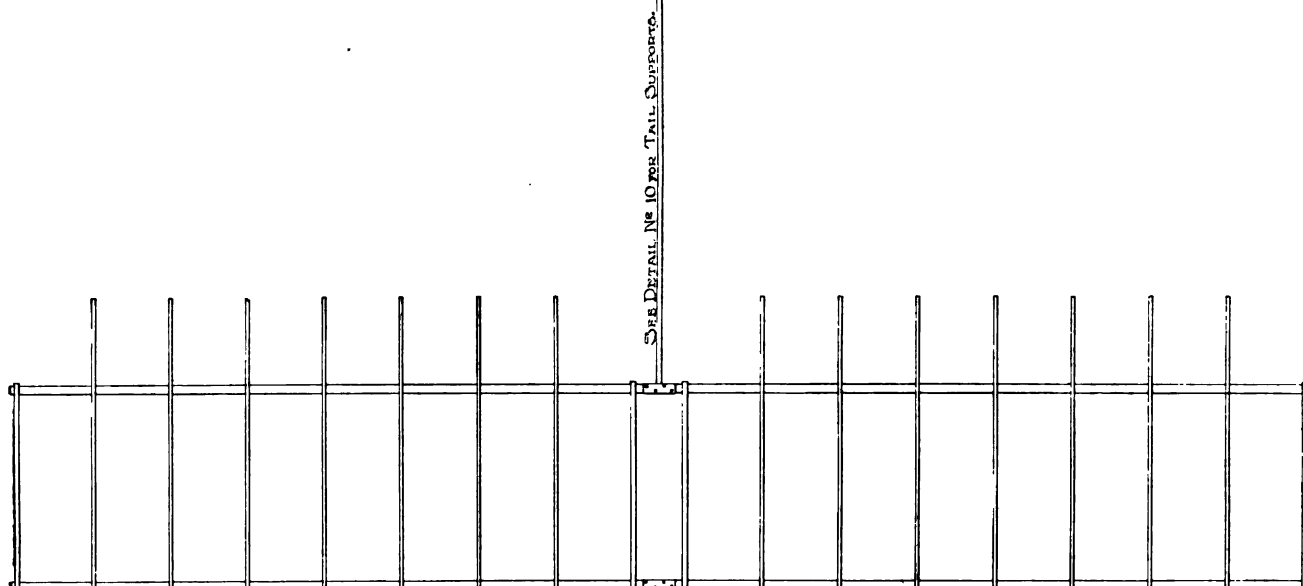
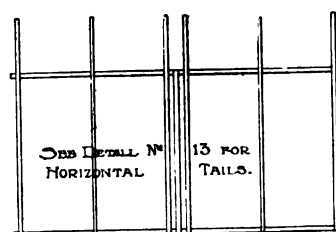
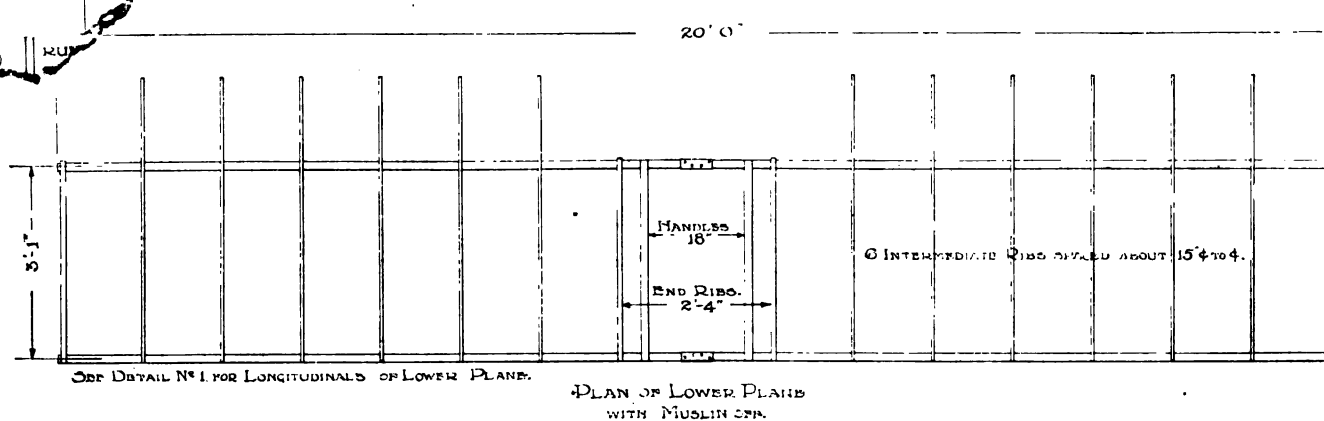
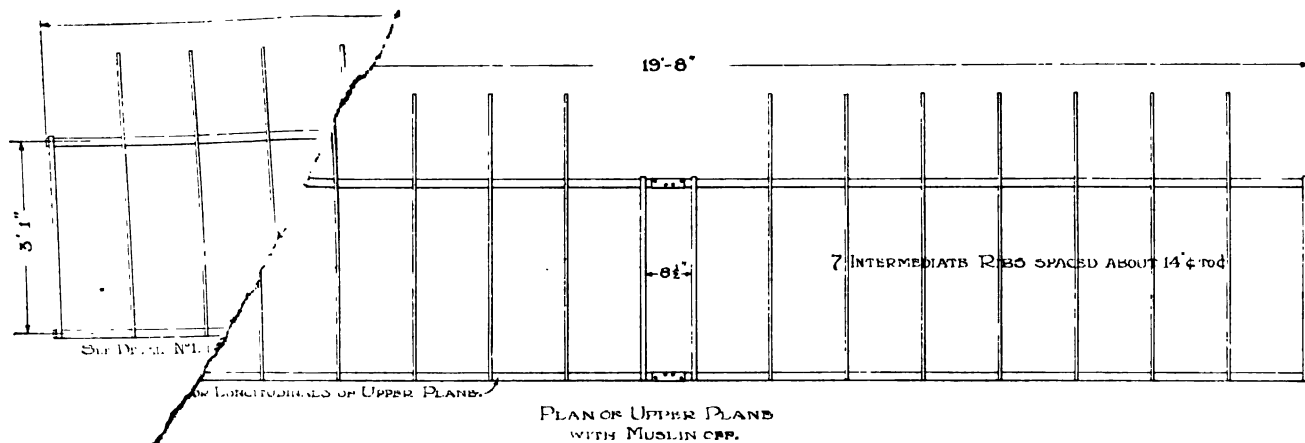
8 Main beams	2 Arm pieces
12 Uprights	8 Heavy ribs
2 Tail supports	26 Light ribs
2 Vertical uprights for tail	4 Heavy tail ribs
4 Cross pieces for tail	3 Skids
8 Steel pieces for couplings. A, page 22	
2 Steel clamps for tail supports. B.	
4 Steel clamps for tail uprights. C.	
24 Castings for uprights. D.	
4 Snap-hooks. G.	
16 Eyebolts 10-24 with nuts. H.	
8 Steel pieces for fastening wire. I.	
88 Brass ferrules. J.	
16 Eyebolts, 10-24 with thumb screws $2\frac{1}{4}$ in. long. K.	
8 Clamps for cross tail pieces. M.	
16 8-32 bolts with nuts 1 in. long	
32 6-32 bolts with nuts $\frac{3}{4}$ in. long	
80 10-24 washers	
16 10-24 bolts with nuts for castings	
16 4-32 bolts with nuts and washers for fastening end ribs	
4 $\frac{1}{4}$ in. bolts 2 in. long with nuts and washers	
2 3-16 split pins $1\frac{1}{2}$ in. long	
1 lb. No. 16 steel piano wire	
200 square feet of muslin	
348 escutcheon pins, or 1 lb. box at 75c	
836 eyelets, or 1,000 at 50c	



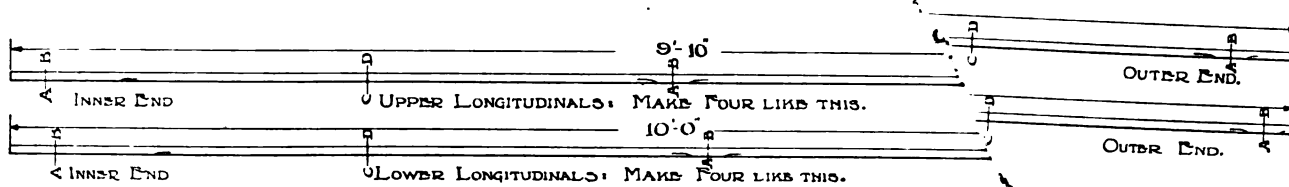
No 13. HORIZONTAL TAIL.

MAKE TWO COMPLETE LIKE THIS OF CLEAR SPRUCE.

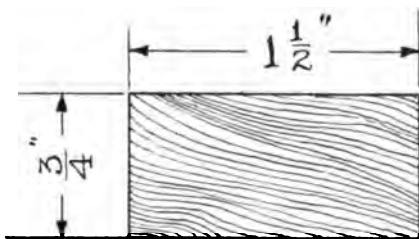




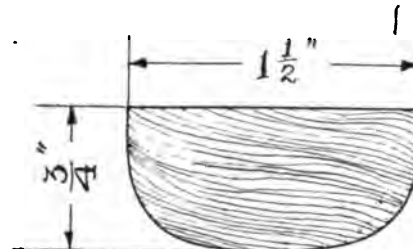
PLAN - COMPLETE - WITHOUT MUSLIN ON.
Framing Diagram of Glider



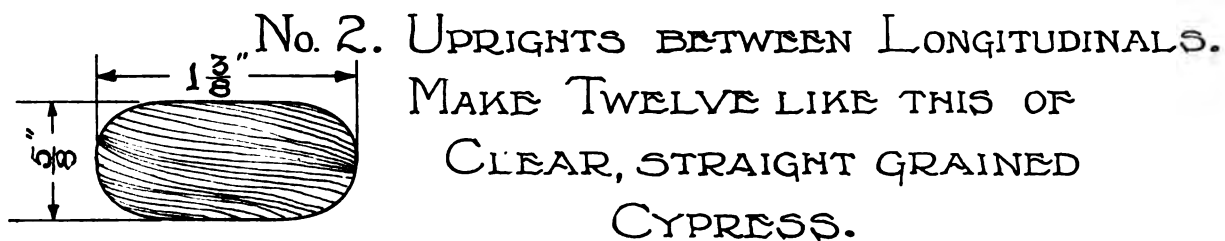
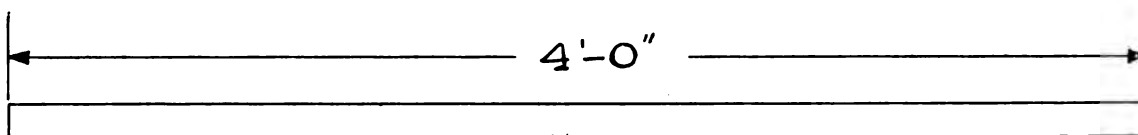
N^o 1. DETAIL OF LONGITUDINALS.
MAKE FOUR OF EACH OF CLEAR SPRUCE.
FREE FROM KNOTS OR SAP.



SECTION THROUGH "A-B."

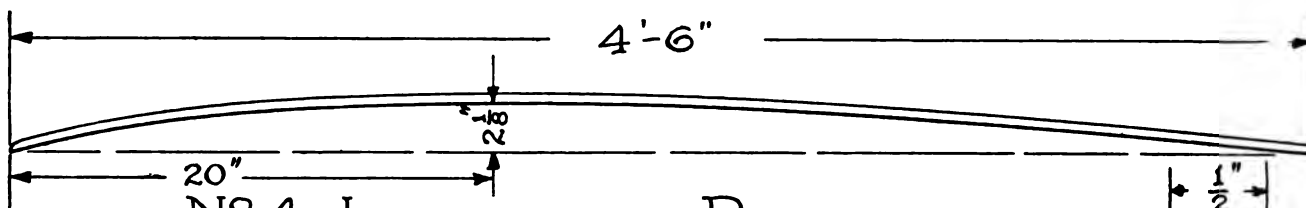


SECTION THROUGH "C-D"



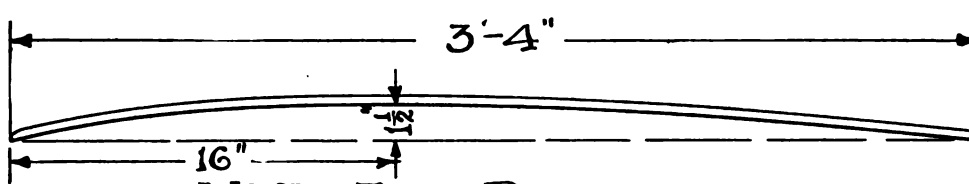
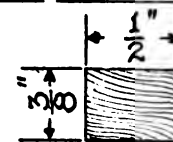
CROSS SECTION

SCALE: FULL SIZE.



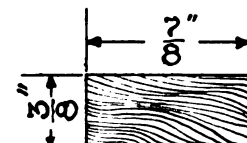
N^o 4. INTERMEDIATE RIBS.

MAKE TWENTY-SIX LIKE THIS OF CLEAR SPRUCE.

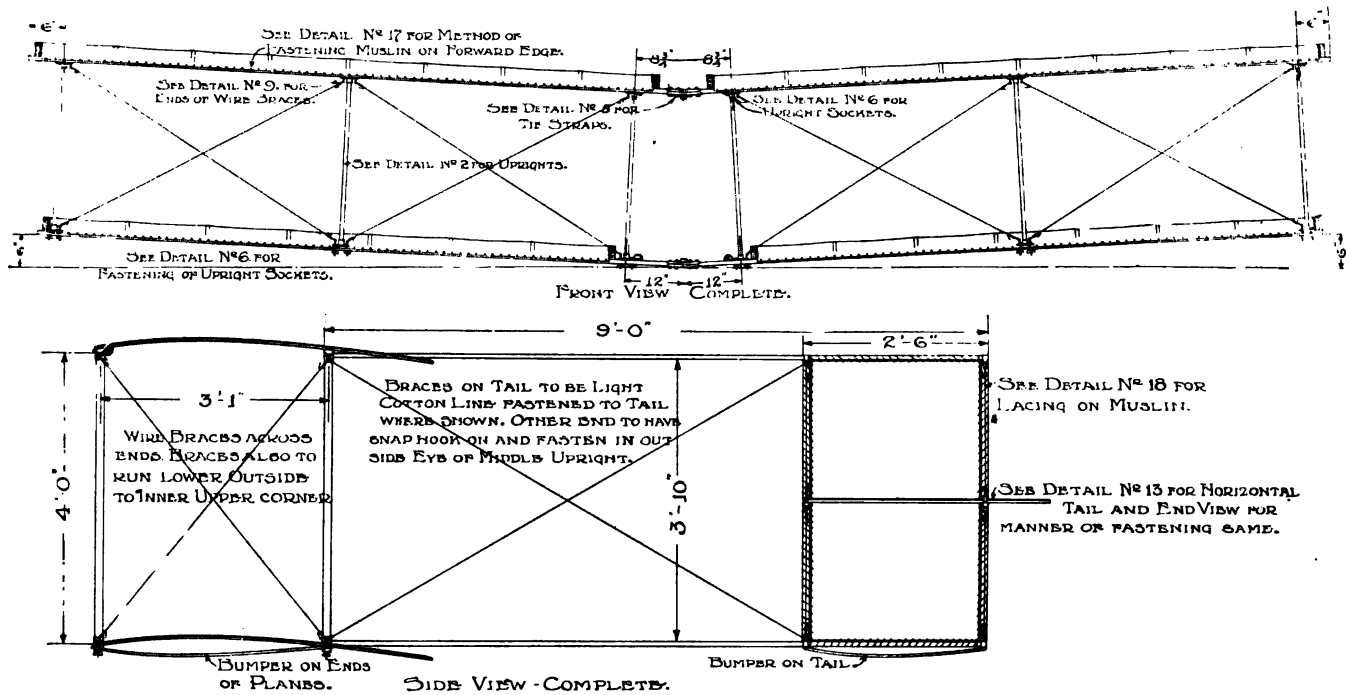


N^o 3. END RIBS.

MAKE EIGHT OF CLEAR SPRUCE.



SECTION.
FULL SIZE.



Front and Side Views of Glider, Showing References for Detail Drawings

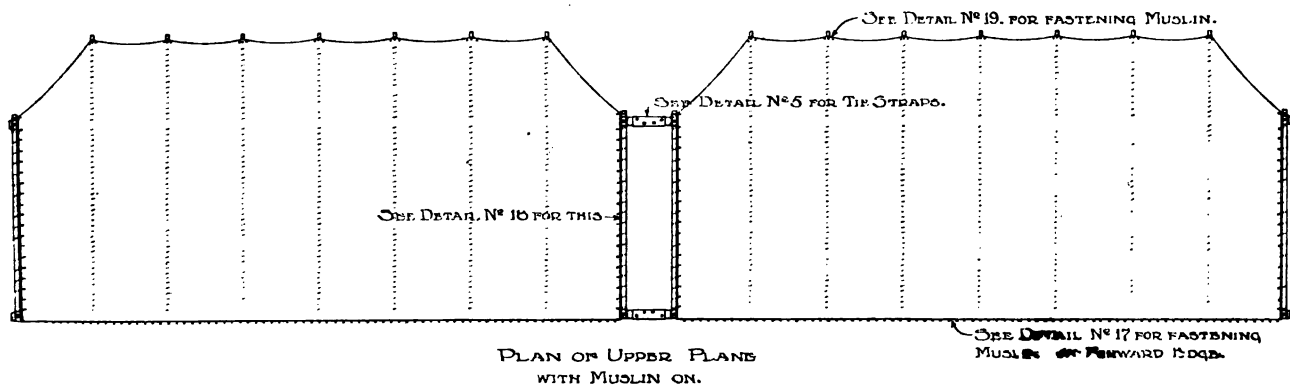
of the various parts, and it has been the endeavor of the writer to show more by the photographs and the drawings, than by the descriptive matter, exactly how the glider should be constructed, and for those who have handled tools to any extent there is little more to add; but for the younger members who desire to check off the work as they go on I shall enumerate in their proper sequence the various steps necessary to construct the machine.

By examining the photos and also Fig. 1, it will be seen that the ship is constructed first of four main beams, jointed in the center, which run athwartships. These are to be gotten out first and their size and dimensions are given in Fig. 1, as stated. Note the full-size sections carefully. These beams are joined in the center by the metal fitting A shown in the plate of fittings, and are held apart and in position by twelve vertical members or uprights shown in Fig. 2. Having gotten out these pieces it is now necessary to get out two heavier pieces known as the arm pieces and illustrated later in Fig. 8. Note that these pieces are gouged out slightly on the lower side in order to save weight. You now get out the two tail supports shown in Fig. 10, which pieces secure the tail of the ship to the main part of the machine. The tail itself consists of the two vertical up-

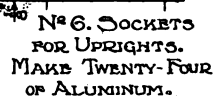
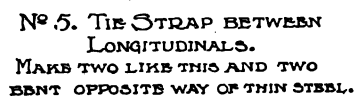
rights shown in Fig. 12 and the pieces shown in detail diagram in Fig. 13. The end view of tail on page 27 shows clearly how the tail is set up.

Three skids to save the machine from being smashed in practice should be made to be fitted later on as shown in the side view of the complete machine. The main part of the machine is now completed and ready for assembling, but in order to get all the woodwork finished at once, it is well at this stage of construction to fashion the ribs over which the canvas is stretched and which consists of eight heavy end ribs as shown in Fig. 3 and the intermediate ribs, twenty-six in number, shown in Fig. 4. Up to the point where the ribs are gotten out all the members of the machine are of straight stuff and there has been no necessity for any bending. So far as the rounding or shaping of the various members is concerned, that may be left to the skill or the taste of the constructor, but it is well in any event to have the structure as nearly like the full-size sections shown as possible. It will be noticed that the ribs are bent or curved slightly more in the forward end than in the after part and it is very essential that the curve of these ribs be exactly as shown in Figs. 3 and 4.

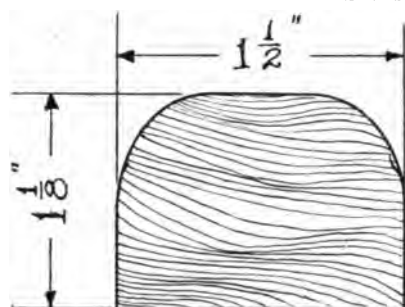
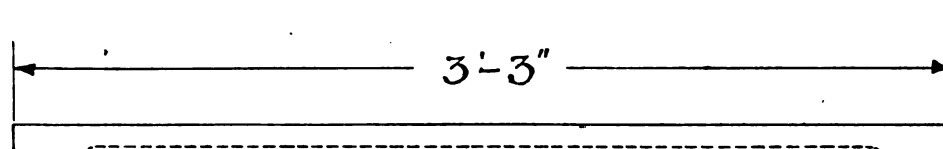
Almost every one who has had any experience in boat



Plan Showing Method of Fastening Muslin to Planes

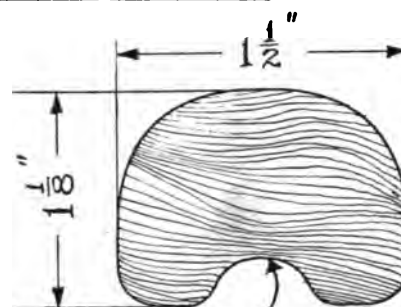


**NOTE: ON LOWER AND UPPER
PLANE SOCKETS TO BE FASTENED
AS SHOWN WITH SCREW EYE AND
THUMB NUTS.**

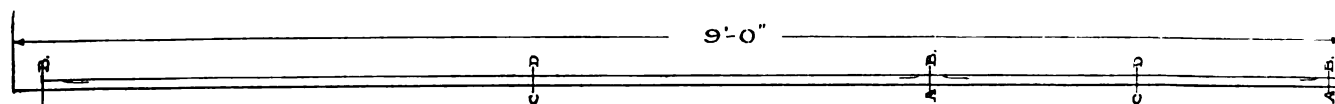
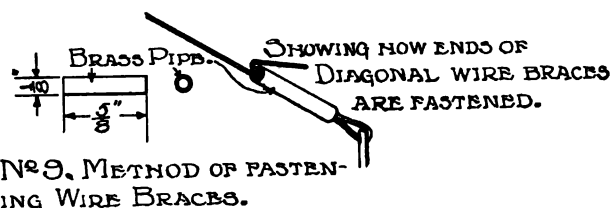
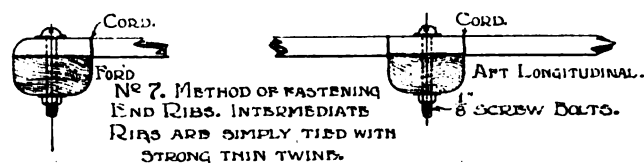


SECTION AT ENDS.
FULL SIZE.

N^o 8. HANDLES.
MAKE TWO OF CLEAR
CYPRESS.

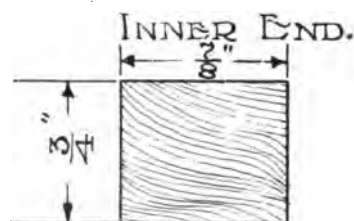


$\frac{1}{2}$ " HALF ROUND GROOVE
SECTION IN MIDDLE.
FULL SIZE.

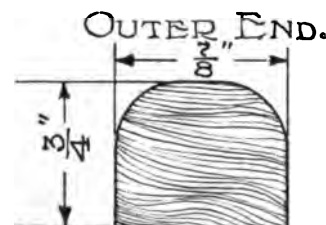


Nº 10. TAIL SUPPORTS.

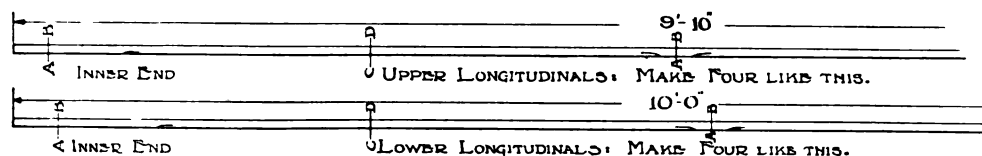
MAKE TWO LIKE THIS OF CLEAR SPRUCE.



SECTION AT "A-B."
FULL SIZE.

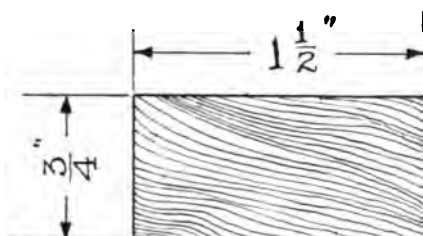


SECTION AT "C-D".
FULL SIZE.

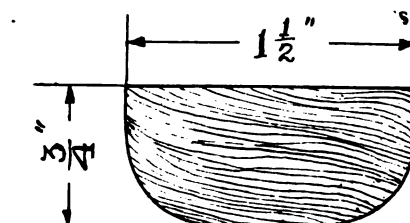


SERVICE

N^o 1. DETAIL OF LONGITUDINALS.
MAKE FOUR OF EACH OF CLEAR SPRUCE.
FREE FROM KNOTS OR SAP.

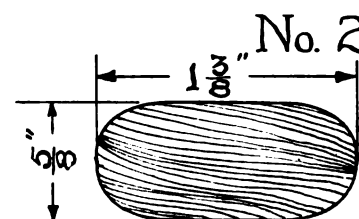
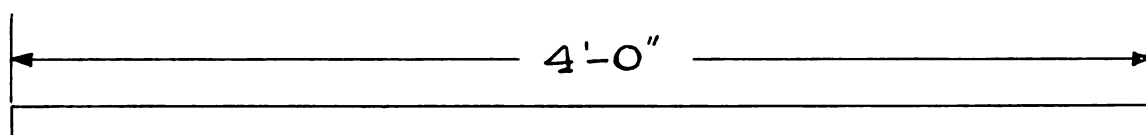


SECTION THROUGH "A-B"



SECTION THROUGH "C-D"

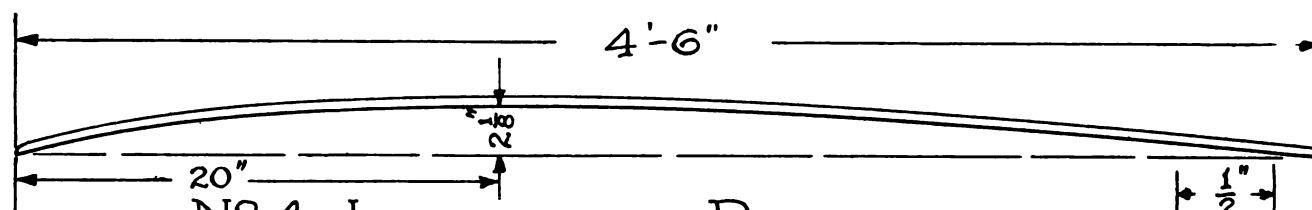
tracted from coal:
dily procured at
st any fuel can
ke, peat, etc.,
he elements
oxide and
combus-
de.



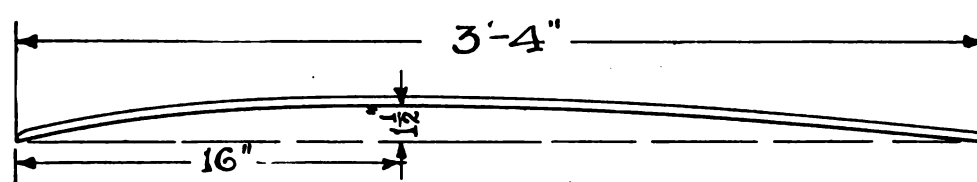
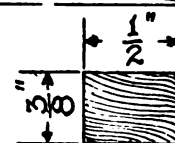
CROSS SECTION

N^o 2. UPRIGHTS BETWEEN LONGITUDINALS.
MAKE TWELVE LIKE THIS OF
CLEAR, STRAIGHT GRAINED
CYPRESS.

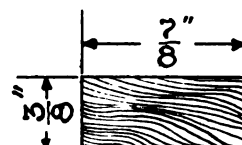
SCALE: FULL SIZE.

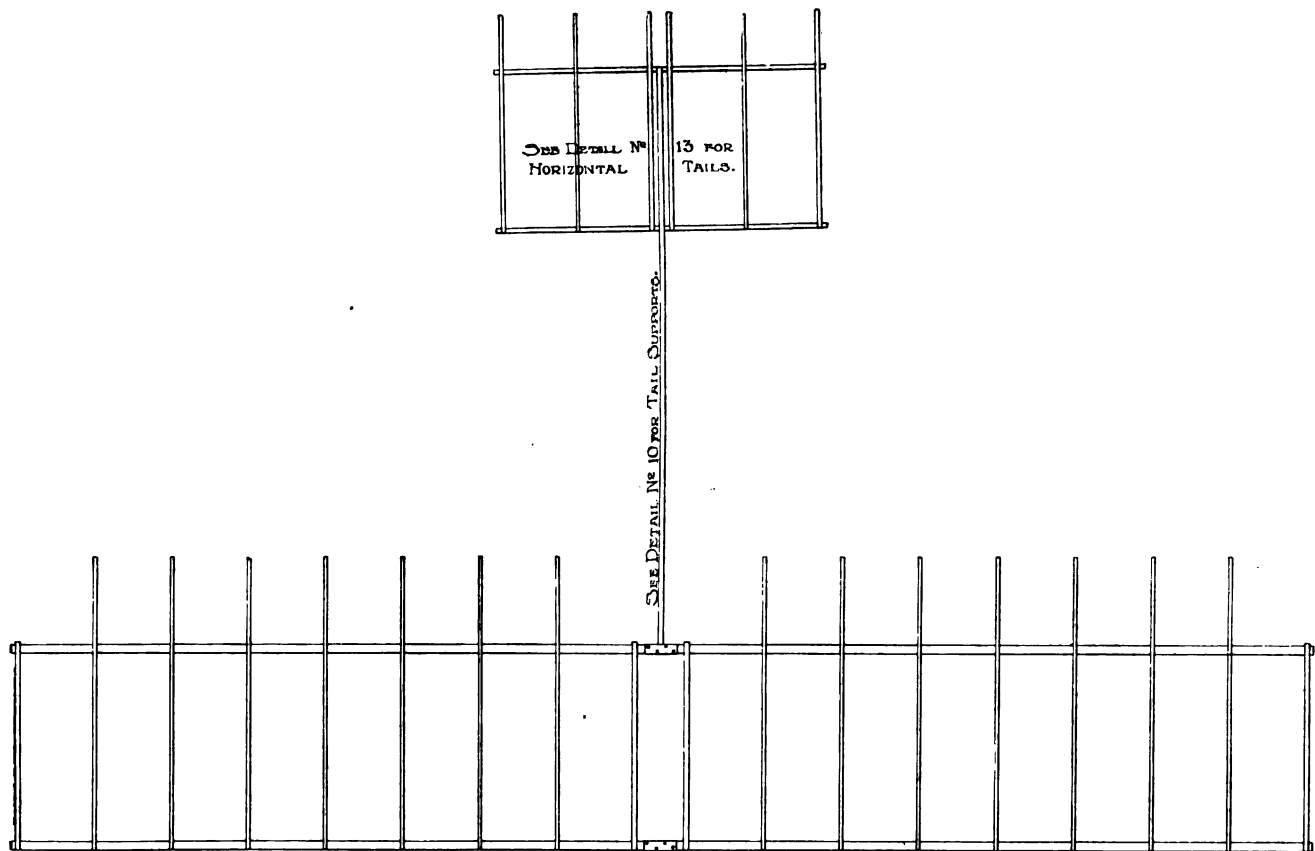
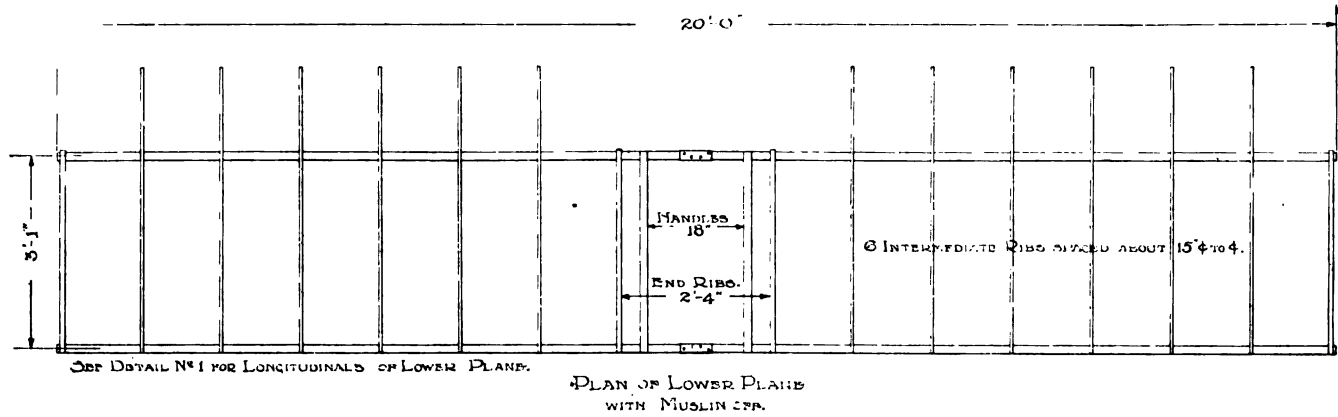
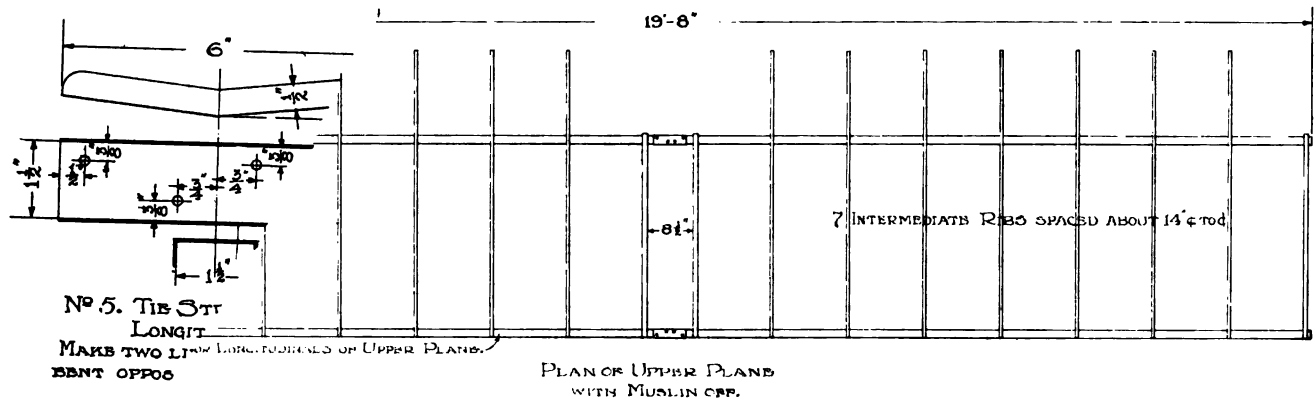


MAKE TWENTY-SIX LIKE THIS OF CLEAR SPRUCE.



MAKE EIGHT OF CLEAR SPRUCE.





Framing Diagram of Glider

PRODUCER GAS FOR MARINE SERVICE

E. W. Graef



UCH has been written on the subject producer gas for power, but little attention has been paid to the marine part of it, and what has been written is of such a nature that it makes the system appear a complicated conglomeration to the layman, instead of what it really is, an extremely simple and easily operated apparatus.

While there have been many without experience who have built stationary

producers that have been unsuccessful, there has been a continuous rapid growth in the successful installations, one concern having in the United States 65% of the total horse-power in use, and over 90% of the horse-power using bituminous coal, these plants amounting to hundreds of thousands of horse-power on land, performing the most exacting duties at a much greater economy than the highest developed steam plant.

Of these successful plants you read but little, but of the experimental and unsuccessful plants, together with the theory they were built under, you read about often, and many of them are spoken of as successful, when they are really rank failures. The reason for this is that the oldest concern has patents that so thoroughly cover good design in producers that it makes it almost impossible to build one successfully without infringing on the same. This is especially true of the bituminous type.

There are large numbers of plants that have been in uninterrupted service for a great many years; some that started with a few thousands of horse-power have increased to many thousands, the companies paying big dividends to their stockholders on what they save in fuel alone.

Single stationary engines of 3,000 and 4,000-horse-power on producer gas are usual, and the next few years will see marine engines of 4,000 or 5,000-h.p. for passenger and freight vessels, just as common. In fact they will drive the steam engine out of existence in time to come, as they require but one-half the space and weight, use but one-third to one-half the fuel, thus giving the vessel more cargo space, and from two to three times the mileage on the same amount of coal; eliminate the danger of boiler explosions and materially reduce the maintenance cost, as the producer plant will outlive many boilers, if not the vessels themselves; and the amount of labor necessary to operate is less.

You, as a RUDDER reader, are especially interested in the smaller plants at present. Consequently I will give an insight of the simple small powers ranging from 25 to 200-h.p. which are readily and easily handled by one man, engine and all.

Producer gas is most generally extracted from coal: simple, because coal is easily and readily procured at almost every port in the world, but most any fuel can be used, such as charcoal, wood, lignite, coke, peat, etc., all of which have a large percentage of the elements that are converted by heat into carbon monoxide and hydrogen, which, when added with air, becomes combustible when under compression in an engine cylinder.

The hard-coal producer is an extremely simple device, and is composed of an air-tight metal shell lined with fire-brick and asbestos, has a shaking grate, an air-sealed hopper or coal chamber on top, and an air-tight ash door an inlet with a rotary fan at the bottom. A gas valve is placed at the top so constructed that the gas can be directed either out through a vent pipe or through the supply pipe to the cleaner and through same to the engine. This fully describes the simple anthracite type of suction producer.

A great many false impressions are had by the uninitiated, as it is generally supposed that a producer requires a great deal of attention in the way of making exact conditions of gas, and that it is necessary to continually regulate the amount of air, etc., going in same; that they are dirty and dangerous, simply because they are gas-making machines. Some seem to have the idea that gas is kept under pressure in a tank or holder. All these impressions are wrong, absolutely.

A producer and its equipment of this type is continually under a vacuum. No gas leak can occur, as any leak or hole that might accidentally be in the producer would allow the outside air to leak in, but no gas could come out. The gas made is nothing more nor less than coal gas, just such as you find at the top of your stove when you open the door above the coal bed. The only reason why your coal stove at home is not a gas producer is that it is not air-tight above the coal bed. If it were, and you had a small pipe on instead of your big stove pipe, you could readily use the gas from this coal through an engine. Of course at this point I will state that it has taken years to develop the producer to the state of perfection that it is to-day, as general proportions and development of detail play a very important part in the design of the successful outfit. The amount of gas made by one of these producers is controlled entirely by the operation of the engine. If the engine is running slowly the cylinders will suck in only a small amount of gas, and when running at a high speed, it sucks in at each suction stroke a greater charge of gas.

Any of the good makes of four-stroke marine gasoline engines can operate on this gas very successfully. In fact they would be surer and easier to operate, in that the mixture of gas and air can be varied a great deal more than the mixture of gasoline and air, and still give good results.

Another feature is the wonderful economy in fuel, which is actually about one pound of coal per brake horse-power hour, and as little or no gas can possibly

be wasted by even the most inexperienced operator, its further economic values are increased. When the engine is operating there is no possible means for the gas being made to go anywhere but through the engine cylinders in the shape of power, as there are no openings from the gas-making or upper part of the producer, other than that leading to the suction of the engine and the ingoing air goes through a chamber or valve at the bottom of the producer. Consequently every atom of gas made must develop power.

The suction gas-producer is absolutely the safest means of power in existence, excepting none, and its simplicity and sureness of operation are second only to its great economy.

Many readers will be puzzled perhaps as to the manipulating of the producer, and consequently I give the following description of the working of a producer plant which, if followed carefully, anyone with average intelligence and familiar with a gasolene engine could operate a producer plant.

A small fire is kindled above the grate. The vent pipe leading to the outside air having first been opened, the fuel is then fed through a charging hopper or chamber located at the top of the producer, and a small rotary fan, such as used on a blacksmith forge, is set in motion after the producer has been closed. This blast kindles the fuel and after the fire is well underway, the charging hopper is again opened and the entire producer is filled with fuel. The fan is then rotated again and the gas tested by lighting a burner located at the top of the producer. As soon as the flame shows a blue color, the vent pipe to the open air is closed and the pipe opened that leads to the cleaner and through same to the engine. A few turns of the fan sends the gas through the cleaner, through the pipes, into the engine. The fan can then be stopped and the engine started just as one would start a gasolene engine. No further attention need be paid to the producer for perhaps an hour or two, depending upon the rate that the engine is drawing on the gas. As soon as the engine is stopped the vent pipe to the open air is opened first, and the pipe to the cleaner is closed. This allows the gas being made to pass out through the vent to the open air. To start the engine again, it is simply necessary to close the vent valve and open the supply valve and the engine started again as usual. The idea in opening the vent valve is, that if there is no vent the fire would almost immediately go out, but otherwise there would be no detrimental results. If the engine has been standing for any length of time the gas in the cleaner and pipe may be too weak to start up at once, and it is only necessary then to close the vent and open the supply pipe and revolve the hand fan to drive the gas to the engine and then started as usual.

Fuel is fed through the hopper every hour and a half to two hours when operating the engine, and just before putting the fuel in, poke the fire through the small poke holes at the top of the producer, knocking down the fire-bed and clinker that may have formed; then open the lower ash door and poke the ashes and clinker from over the grate and under the fire. These will fall into the ash pan below the grate and can be removed after the day's run, or when convenient on long runs.

When it is desired to close the engine down for a day or a week, fill the producer with fuel, open the vent pipe and regulate the damper at the lower end of the producer. This will keep the fire in a very low but

alive condition, and will keep lighted for days. It is necessary, however, to give this some short attention every 24 hours or 48 hours by shaking the fire down slightly and filling the producer up with coal.

When the producer is handled properly there is but a very small amount of coal burned during these lay-overs.

The modern marine producer made in this country is about from one-half to three-quarters the size and weight per horse-power compared to the foreign producers, and it is really remarkable what small space they consume when properly installed in a boat, and their weights are not at all detrimental for service in a cruiser or vessels used for business.

It is hard to realize the immense economies in this source of power above gasolene and other fuels. It is a remarkable fact that a 25-h.p. gasolene engine with gasolene at fourteen cents a gallon costs as much to operate as a 220-h.p. producer gas engine with coal at four dollars a ton.

From a business standpoint the following comparison is interesting:

A 100-h.p. four-cycle gasolene engine operating on a freight boat, 10 hours a day for 300 days in the year, will consume 300,000 pints of gasolene, or 37,500 gallons, which at fourteen cents a gallon costs \$5,250. This is for fuel only.

The same engine operating at 100-h.p. for the same length of time and the same number of days, would use 300,000 pounds of coal, or 150 net tons, which at four dollars a ton costs \$600.

The same horse-power engine operating under steam would use approximately three times this amount of coal, consequently \$1,800 for fuel.

Anthracite pea coal weighs one pound per pint; gasolene weighs slightly less than one pound per pint; consequently coal is less bulky than gasolene, but as it takes one pound of coal per horse-power hour, or a pint of gasolene per horse-power hour, the space required by either of these fuels is alike.

Gasolene, however, must be stowed in tanks and in safe places, whereupon coal can be stowed in any convenient place in the boat, even in the bilge in bags, with the total absence of any danger and many times the mileage in coal can be carried without inconvenience. The value of this feature for long cruises or ocean races is more than evident. It is a necessity, even if the absolute safety of the coal over the dangerous gasolene were not taken into consideration.

The marine producer has its limitations as far as light pleasure boats are concerned, as the equipment is too heavy for small high-speed racing boats, as it weighs with its equipment, about ten pounds to the horse-power. The space they occupy is small, and is no particular obstacle for the small cruising pleasure boat if the plant is allowed for when planning the boat.

There are a large number of producer gas boats in successful operation in many parts of the United States and in Europe, and their economies in fuel place them out of competition, as no other known power can compete commercially with them. The American business man, as soon as he is convinced of this, will take hold and encourage the development of large marine powers, as he has already done with producer gas on land, and the results will be that our merchant marine will take the lead in the world's commerce, owing to our cheap fuels.

FRENCH AEROPLANE ENGINES

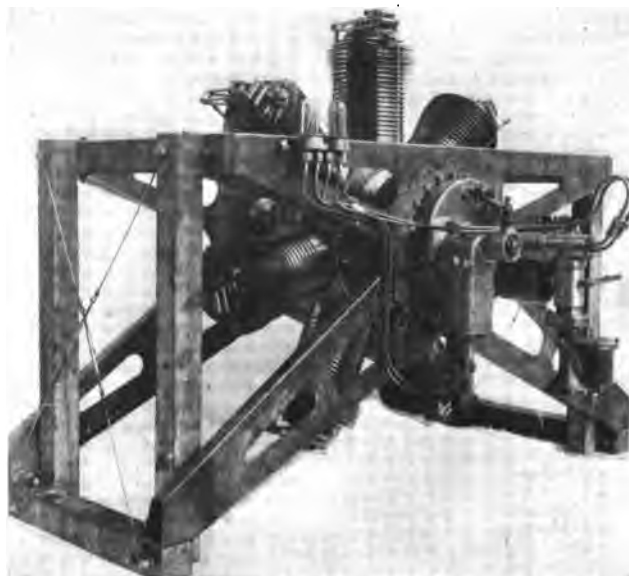
Warren H. Miller



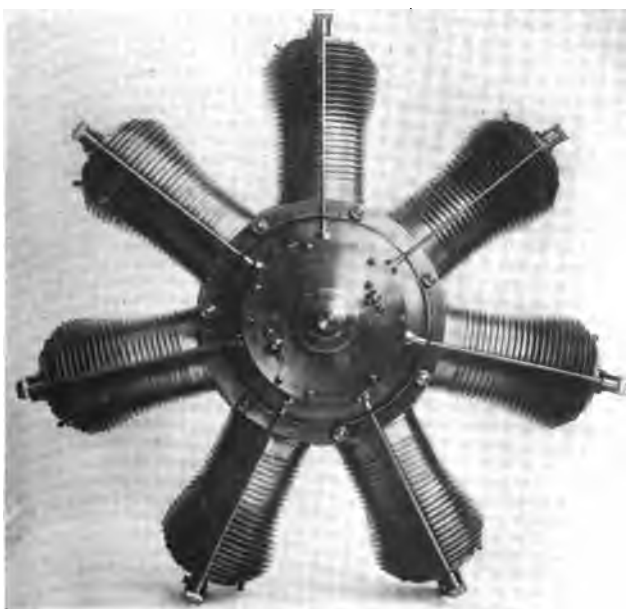
WHILE the aim of the later French constructors of aeroplane engines has been along the lines of extreme lightness in kilos per horse-power, there is really little to be gained in reducing this below the limits of effective and reliable operation of the engine. A remarkable paper by Colonel Renard on the helicopter or vertical aero-propeller, which showed that theoretically an engine weighing 10 kilos per h.p. would raise only 160 grammes; 3 kilos per h.p. 220 kilogrammes; 2 kilos per h.p. $2\frac{1}{2}$ tons, and 1 kilo per h.p. 160 tons (!), was at the bottom of the craze for extra-light engines. The good Colonel's paper caused considerable astonishment throughout France, until some skeptic came along and showed that to raise 160 tons with an aeroplane would take 960,000-h.p. and a total portative effort of 1,120 tons! The loads actually possible with the helicopter are: For 3 kilos per h.p., 139 kg.; 2 kilos per h.p. 340 kg., and 1 kilo per h.p. 657 kg. These figures are somewhat below what can be done with any good aeroplane to-day. The lightest engines known to the writer are the Farcot 100-h.p., weighing 95 kilos, the Clément-Bayard 50, weighing 70

kilos, and the Gnôme 50, weighing 75 kilos. Except where this lightness comes in as a consequence of a design using light parts made of the strongest possible steels, it is of no great importance, once the weight falls below, say, 2 kilos per h.p.

The most famous, and the one of the French engines which has captured the most prize-money, is the Gnôme. This engine is made in three sizes: 30, 50 and 100-h.p., of 5, 7 and 14 cylinders respectively. The 50-h.p., which is used in the large monoplanes and on a great many of



Pressed Steel Mounting for Gnôme Engine for Use in Farman and Sommer Biplanes



Gnôme 50-H.P. Aviation Engine

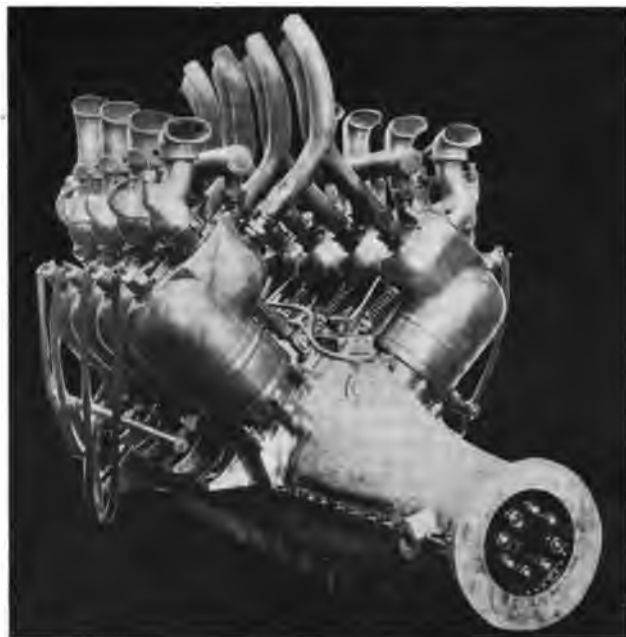
the Farman, Voisin and Sommer biplanes, has seven cylinders machined out of solid blocks of nickel-steel, vanes and all, and is of $4\frac{1}{2}$ -in. bore by 5-in. stroke for each cylinder. The crank-case is turned out of a solid forged steel ring, which has seven holes in it to receive the cylinder-ends which are held in place by snap-rings keyed in place. As the seven cylinders are the flywheel, the ordinary bolt fastenings for cylinders are not strong enough, as there is the great centrifugal force besides the reactions of the piston to provide for. Since the case and cylinders revolve, the end-housings of the case are provided with large ball-bearing races resting on the crank-shaft, which latter is hollow and held stationary. The propeller of the aeroplane is attached directly to the case and turns with it, while the end of the crank is secured to a light steel frame bolted into the aeroplane frame. An ordinary float-feed carbureter supplies the mixture, which enters into the crank-case through the hollow crank-shaft. The inlet valves are in the piston heads, and admit the mixture from the crank-case into



Anzani Engine, 50 H.P.

the explosion chamber. To counteract the tendency of centrifugal force to open these inlet valves and hold them open is easier than it looks. All that is needed is a couple of small counterbalancing levers, weighted at the ends and balancing the weights of the inlet valves. The greater the centrifugal force tending to open the inlet valves the more this same force acts upon the counterweights, pulling them shut, so that the inlet valves are balanced at all speeds.

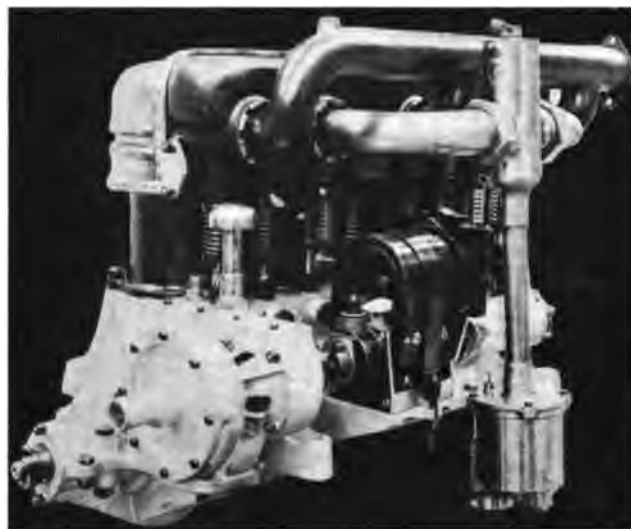
The exhaust valves are mechanically operated by tappet rods actuated by a cam-wheel on the crank-shaft, which wheel is of course stationary while the rod ends pass over it. The cylinder head constitutes the exhaust valve, which is opened inwards by the valve-rod and lever, so that centrifugal force only acts on it to close it tighter. The seven connecting rods all operate on a master-bearing surrounding the crank-pin, and itself carrying seven small pins which take the ball-bearing ends of the connecting rods.



Antoinette Engine 50 H.P.

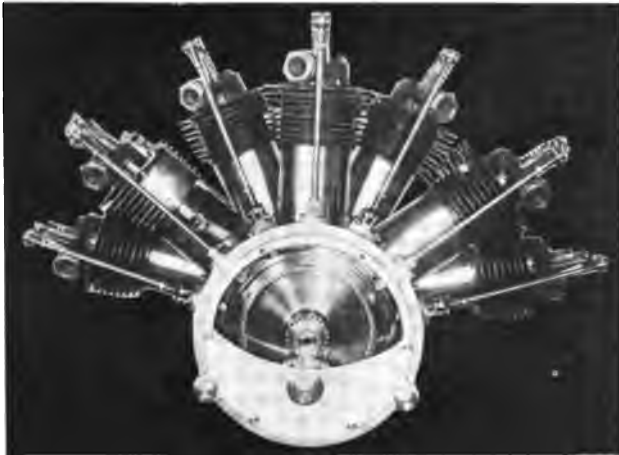
You will note from the above brief description that the Gnome engine is a good deal simpler than it would seem, considering the problems involved, and it is exceedingly light, compact, and strong, being made throughout in nickel-steel. Its uniform rotation is most excellent, because of the tremendous flywheel effect of the seven rotating cylinders, and it is almost frictionless, being ball-bearing throughout. It weighs 3.36 lb to the horse-power and revolves at 1,200 r.p.m. The gyroscopic action of so large a spinning weight (168 lb) has been often commented upon as deleterious to good management of the aeroplane, but of the great number of French pilots who use the Gnome engine on their aeroplanes none has complained of gyroscopic interference in practical service.

Of the French engines, the most famous and successful after the Gnome are the Anzani, Antoinette, Clément-Bayard, Gobron, R.E.P. and E.N.V. machines. The Antoinette is built strictly for aeroplane service, with all arrangements for carrying the screw and taking its reactions in one piece with the engine. It is particularly made for the Blériot and Antoinette monoplanes, wherein



Clément-Bayard Engine, 50 H.P.

it is placed the furthest forward of any part of the 'plane, being mounted in the main frame far in advance of the pilot. The long projecting neck shown in the illustration carries the gear and ball-bearing thrusts for the screw. As the latter *pulls* the aeroplane behind it, this thrust is *away from* the engine instead of towards it, contrary to tall 'planes where the screw is in the rear. The engine develops 55 brake horse-power and has eight cylinders of 110 mm. stroke by 105 mm. bore. There is no carbureter. The air is scooped in by the eight funnels shown on top of the engine and is mixed with "essence" by a spray needle in each of the small brass valves, which one can observe mounted in a boss cast on the air inlet funnels. These are all fed by a brass pipe system, in which the gasoline is put under pressure by a small rotary pump, driven off the timer and magneto shaft. The mixture is sucked in automatically through a check valve during the filling stroke, is compressed and ignited; and after the power stroke the exhaust valve is opened by a cam-shaft mounted up in the peak of the crank-case and escapes by the inverted Y-branch backwards over the aeroplane. The valve-box and cylinder are of cast-steel



R.E.P. Engine, 70 H.P.

in one piece and surrounded by a copper water-jacket, which covers both box and cylinder. These copper jackets are obtained in a single piece by electrolytic deposition of copper, and the way the French get them on with only the least possible cutting and brazing is really wonderful. The water inlet mains pass along between the air inlet cowls and the exhaust pipes, entering each jacket just above the exhaust connections to the valve-box. The hot water passes out on the lower side of the cylinder jacket about the position of the end of the working stroke. It is cooled in a radiator, which for the 50-h.p. size has 12 square meters of cooling surface and weighs only 12 kilos. Circulation is either by centrifugal pump or thermosiphon effect.

As there are eight cylinders acting in pairs on cranks at 90° the timing is such that two working strokes are always operating on the shaft at opposite cranks during both halves of the revolution, thus giving a very good, even turning moment.

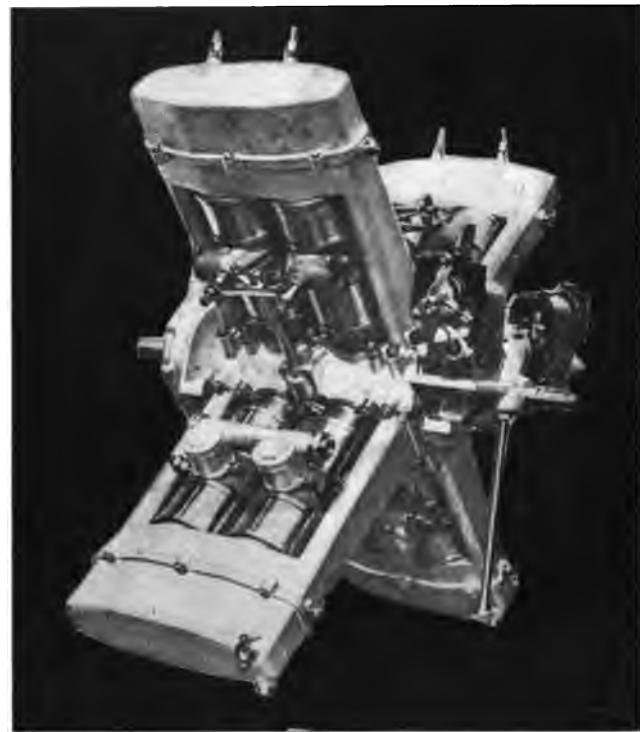
The E.N.V. engine is very like the Antoinette in general arrangement, and is made in 35 and 70-h.p. sizes, turning 1,500 r.p.m., and weighing 80 and 120 kilos respectively. It has the same electrolytic copper water-jacket and the same arrangement of crank-shaft, with, however, a middle bearing. The mixing is done by a large carbureter instead of being an adjustable spray for



E.N.V Engine, 70 H.P.

each cylinder, as with the Antoinette, and is distributed to the valves by a copper branch pipe. The water connections are all with rubber couplings instead of screwed unions, because of troubles experienced in these connections by vibration in other engines. Both inlet and outlet valves are cam-actuated. The cam-shaft is mounted in the peak of the crank-case, as in the Antoinette, and is accessible by a screwed cover. Spark plugs are placed in the cover of the inlet valves, which open upside down, and ignite the mixture in the passage leading to the cylinder. This disposition eliminates one hole in the copper covering of the water-jacket.

The Clément-Bayard differs from all the other French aeroplane engines, in using aluminum for the crank case. This metal has been generally considered too unsafe for use in any part of aeroplane engines, and is so in all types where many cylinders reacting upon the case are so closely grouped as to leave but little metal for connections. But the Clément-Bayard has but four cylinders,



Gobron Engine, 80 H.P.

and these are set in a row, leaving plenty of metal around the base, so aluminum in this case is not only safe but advisable. The engine is therefore very light, and to aid in the reduction of metal all the cylinders and valve-bonnets are cast in one piece, the inlet valves being in pairs side by side, so that there are but two branches to the carbureter manifold. This arrangement necessitates three branches in the exhaust pipe, the central one receiving the exhaust of the two interior cylinders. The inlet and exhaust valves are driven by a cam-shaft in one corner of the case, which shaft is also connected by gears to the magneto circulating pump and oil pump, the latter being integral with the case and sucking oil from the bottom of the case to deliver it by pressure ducts to various parts of the engine.

The R.E.P. engine, designed by Mons. Robert Esnault-Pelterie, president of the federated aero clubs of France, is an exceedingly light and compact machine. It develops 35 brake horse-power on a weight of 68 kilos,

or 50-h.p. at 98 kilos in the larger size. There are seven cylinders arranged in two fans of three and four cylinders, acting on two cranks at 180°. In the illustration, wherein the engine is shown sectioned for exhibition purposes, the first one of the forward cylinders is cut open, showing the arrangement of valves, etc. The cylinders are of cast-steel, turned inside and out. A manifold for the carbureter serves all the valve-bonnets, and the automatic inlet valves are central with the exhaust valves and mounted on the disk of the latter. The spark plugs are part of the inlet-valve post. The exhaust is cam-actuated, opening the whole head of the cylinder inwards and allowing the burnt gases to escape into the outer hood, in which are cast the escape-holes. The exhaust valve is guided by a cylindrical extension, which also serves as the inlet valve chamber. The cam-wheel motion for the exhaust valve rods is apparent from a study of the illustration, wherein an internal gear on the wheel receives the reduced motion from a gear on the cover driven by the main shaft.

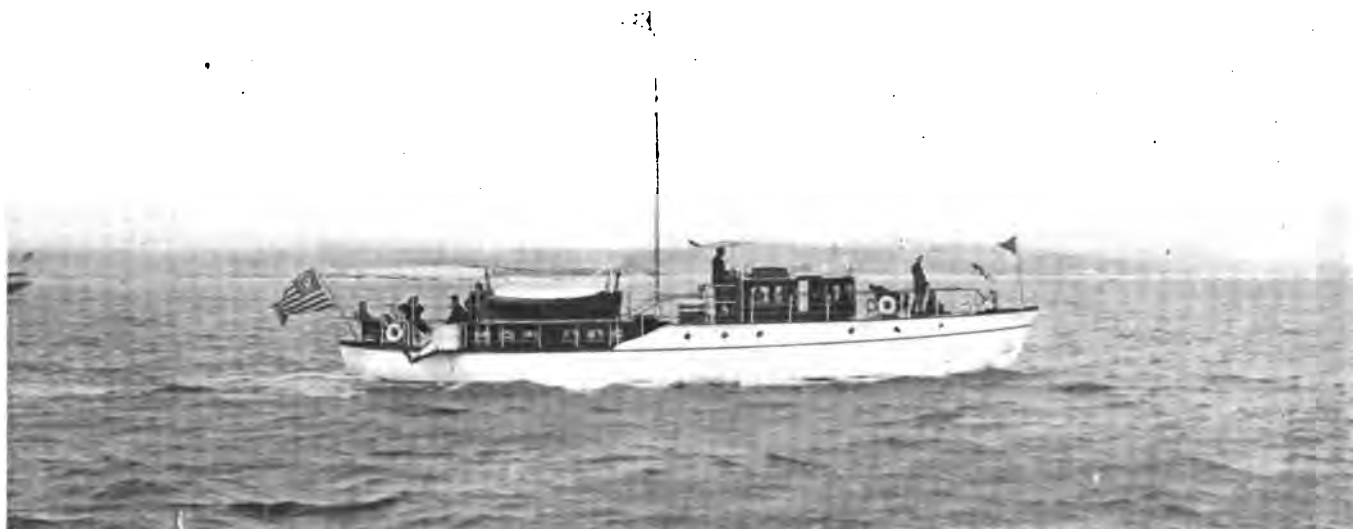
The cooling of this engine is by a fan, blowing on the air vanes of the cylinders, and also by the motion of the aeroplane itself, which produces about as powerful a breeze at sixty miles an hour as any fan. Owing to their being seven consecutive explosions per two revolutions the turning moment on the crank-shaft is quite as steady and powerful as with the Antoinettes and E.N.V.S.

Perhaps the boldest and most original of the French aeroplane engines is the Gobron. This is an eight-cylinder engine, the cylinders being arranged two by two in the form of a St. Andrew's cross. The admission and exhaust valves are placed in the center of the cylinders, and there are two pistons in each cylinder, so that the reaction of each explosion acts both ways. This disposition does not give double the power, but it *does* give twice the power in but little more space than a single cylinder, since the cylinder-head is eliminated and the combustion chamber is simply the space between the two pistons. The lower pair of cylinders in the illustration shows the admission valves, which are ordinary spring poppets served by a manifold attached to the carbureter piping. The spark plug will be perceived alongside the valve-bonnet. The upper pair of cylinders shows the ex-

haust valve mechanism, which is mechanically actuated by a cam on the crank-shaft inside the case. You will note that there are sixteen pistons and piston-rods in the engine while there are only eight inlet and exhaust valves and spark plugs, and no cylinder-heads, so a very powerful compact machine is obtained. The inner pistons act directly on the crank in the usual manner. The outer ones are joined by a yoke inside the crank-case and the connecting rods pass down inside the legs of the main frames, which are hollow and attack the crank at each end of the crank-shaft. There are thus four cranks at 90° and three main bearings are worked in, placed between the outer and inner cylinder cranks and the two inner cylinder cranks.

As this engine develops 80-h.p. with a bore of 90 mm.x160 mm. stroke (3.5-in.x6.3-in.), it should be one of the lightest engines known, and doubtless would be if the frame were made in some aluminum alloy. As it is, with a tough grey cast-iron frame, it weighs 150 kilos. The cooling of the engine is by cylindrical copper jackets surrounding the cylinders, and takes about 15 liters of water, including that in the radiator.

In conclusion, a brief description is in order of the famous Anzani engine, the one with which Blériot made all his earlier exploits, including the first crossing of the Channel. It is the simplest of them all. The crank is made of two cast-steel flywheels, fitting closely inside the case and joined by a nickel-steel crank-pin, which is long enough to take the full connecting-rod bearing of the middle cylinder and the two-forked connecting-rod ends of the side cylinders. The cylinders themselves are made of extra quality cast iron, with vanes and valve-box cast integral with them. The inlet valves are spring poppet of 5% nickel-steel, and receive the mixture from the distribution branches of the carbureter, which has an air injector to aid in mixing with the spray. The exhaust valves are mechanically operated by short rods actuated from three cams driven by gear-wheels off the main shaft, which mechanism also operates the timer. Oiling is splash lubrication from the crank-case. The spark plugs are mounted on the valve-box casting and project into the passage just below the inlet valves. They are operated by a 6-volt magneto or storage battery and spark coil.



Kahkin IV 61 Ft. O. A., Twin-Screw Four-Cylinder 5 $\frac{1}{4}$ x7 $\frac{1}{2}$ Twentieth Century Engines Owned by Mr. Charles Martin Clark, New York City

THE NEW BUG CLASS OF 1911

Thornton Smith

THE Manhasset Bay Bug Class originated with Mr. George Corry, of the Manhasset Bay Y. C. He, too, gave it the title of "Bug," and each boat was named after some type of bug. Several of the Sound regatta committees often term them the "marine insects." They were designed from the board of Mr. William Gardner, during the Fall of 1905. As to model and



lines, and even the rig for racing purposes, it was a new departure for one-designs on Long Island Sound, although the hull was somewhat fashioned after one of Mr. Gardner's earlier boats, called *The Departure*, built for Mr. Clinton Seeley, which raced with so much success in the old Newport thirty class. After the plans had been turned over to Mr. Corry he found that it was beginning to occupy more of his time from business than he alone could spare to get the class really started, at which period the writer had become interested and was

drawn in for working or tuning-up purposes. As sailors say, "just to lend a hand."

The contract for the construction of fourteen boats was then given to the shop of Isaac E. Smith, of Port Washington. The boats were drawn for by lot early in January, 1906, and the subscribers were members of several of the yacht clubs on both sides of the Sound, containing the names of several well-known racing men, among whom were Mr. John F. O'Rourke and Mr. Clarkson Cowl, who initiated their sons into the sport from these boats.

The type resembled in its hull a half-round skiff of



Big Bug. Owned by Geo. A. Corry, Manhasset Bay Y. C.



Lady Bug. Fred. Gade, Owner, Horseshoe Harbor Y. C.

the old Cow Boy order, but in place of a centerboard, as in the skiff, an iron fin was substituted. Almost completely decked over, with the exception of a very narrow cockpit but five feet long. They were to be non-capsizable in consequence of this fin, which had a depth of three feet and weighed 275 lb. Their dimensions were 19 ft. over all by 4 ft. 7 in. breadth. It had been agreed that whoever drew No. 1 in the series was to be made the trial horse of, and experiments worked out on No. 1 for the good of the balance of the fleet. No. 1, afterward known as *Skeeter*, was put overboard one late Sunday in April. The wind at the time was Northeast, and

blowing stiff, with fitful gusts. There were scattered along the shore and standing on the sand docks at Port Washington the usual number of critical eyes well-known to the locality, ready to watch the first performance of this, the smallest of fin-keel sloops. The Bugs were designed to carry and race with two persons, and two got in Skeeter. It did not take very long for those who were watching to find out exactly what they thought had happened. A stiff puff hit her while close-hauled, and she went flat over on her side until the sails were in the water, and the crew crawled out and stood on the flat fin until the puff let up and the boat righted again. It was said then and there by the onlookers that the class was a failure—had capsized, and that was enough. Some even seemed delighted at such a result. The model was such a departure, with its tall sail spread, that all the I-told-you-sos who had been watching their construction during the winter had their inning on the first crack out. But Skeeter had not taken in a drop of water, even though capsized. That was the star feature, and the remedy to hold her up was evident and simple. Within two weeks from the day she capsized a bulb of solid cast-iron had been moulded and bolted to the bottom of the fin, adding 200 lb

more. This bulb resembled the shape of a tom-cod more than any other definite object that I can recall, with its blunt end placed forward, tapering off to almost nothing aft. The addition was the crowning success of a class of racing one-designs that few such classes may boast of.

The past season of 1910 closed their fifth consecutive racing year. These little fellows have hung together well, coming to the starting line of all the clubs in their Sound regattas, blow high or blow low. The Bugs were always there, and always finished without the usual racing mishaps. They have attended the regattas from Sea Gate to Stamford; have raced through innumerable squalls, and on two racing dates when a gale blew.

When the wind was blowing at the rate of fifty miles an hour at times, it was said, during the last day of race week at the Larchmont Y. C. in 1907, it was Big Bug, Skeeter, and Dragon Fly who started and finished the regular course on that memorable day, which caused the schooner yacht Ingomar to split her foresail from gaff to boom, while two of the racing craft in the smaller classes capsized and sunk. The three Bugs had their jibs stowed, and sailed the race with double-reefed mainsails only, while the wind howled out of the Northwest and



Champion Skeeter Formerly Owned by Thornton Smith, Larchmont Y. C., Winner of Three Consecutive Championship Pennants



Mayflye, Owned by Com. A. B. Fry, N. Y. A. C.

beat the waters of the Sound into a sheet of green and white foam. It was a wicked racing day, and strained some of the larger sloops to leaking and broken spars, but the Bugs finished as named above and without a strain or mishap.

They are clever in windward work, and down the wind go faster than boats in the next larger class who set spinnakers. The Bugs carry no balloon sails, and with their flat sides have proven fast. Their water-line is but a trifle over 13 ft. Just before their lee rail is awash, when close-hauled, they are probably at their best point of sailing, and eat up to windward fast, as at this point the flat side acts like a lee-board, and instead of falling off in a seaway they actually reach to windward of where they point.



Sheeter, on the Wind under Double Reefs

The rig suits this model of a narrow flat-sided boat. The mast is really short, because of the long gaff or yard, which hoists snug or block to block when set, allowing no swing away from the mast as in the regularly cut mainsails on other boats. It resembles a club-topsail on the larger sloops, when the topsail is topmast-headed and set home.

The new Bug for 1911, which has also been designed by Mr. William Gardner, and now under construction at the shops of Isaac Smith in Port Washington, is a reproduction of the old and original Bug, but on a larger and more comfortable scale. This racing craft is not alone built and rigged to date, but contains all the improvements brought about by the five years' practical experience derived from the first Bug, in addition to many of the finishing touches, for which the architect is



Bow View of Bug, Showing Flat Sides of Craft



The Bugs Make Good Sailabouts When Not Racing

famous. The dimensions of the new boat are 22 ft. 3 in. over all and 5 ft. 7 in. breadth, an increase of 3 ft. by 1 ft. The bulb fin will contain 800 lb. with an increase of sail area of 60 sq. ft. The ends of the hull are drawn out more gracefully in consequence of the three additional feet over all, with a more powerful model as the result. The cockpit is a foot longer and six inches wider, with coamings set outboard on deck. There are forward and aft bulkheads of wood and plenty of storage room from water-tight screw-top deck hatches. Steel standing rigging with bronze fittings will be specially made for this one-design, and both jib and mainsail will be trimmed similar to the sonder boats of last season. The cost of the new Bug completely rigged is \$200, a cut of which is shown in the design section. Members of seven of the leading yacht clubs of the Sound have given their orders for the new boats, and there will be upwards of thirty Bugs of the 1911 model racing the coming season. It is proposed that they race in two or three divisions. This will give the newcomers of the class the opportunity of electing their own racing strength to start with, should they feel that from lack of experience with the class they are not at first qualified to race with those who have been in it for five seasons. They will then be obliged to pass on to the division above according to their success or number of firsts and seconds, so that racing in the first division may be attained during the first season. The class promises to be one of the most successful one-designs ever put on Long Island Sound, as well as the largest in numbers, as it already includes a list of well-known and enthusiastic racing men in the game. It may well be called the Inter-Club Bug Class of 1911, and is as well calculated to race in the waters at Sea Gate or Marblehead as on Long Island Sound.

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STEAM YACHT TALOFA

ONE of the most successful of the launch type steam yachts, Talofa, was constructed last season for Mr. G. G. Peters, of Boston, Mass., from designs by Messrs. Tams, Lemoine & Crane.

The principal dimensions of Talofa are as follows:

101 ft. 6 in. over all, 89 ft. water-line, 15 ft. breadth, depth 10 ft. and draught 6 ft. She is a powerful model, showing excellent seagoing qualities.

Forward, the sides of the ship are carried up, making practically a flush deck. She has ample room on this deck for the convenient handling of her anchors, lines, etc. Has a large teak deckhouse forward, followed by the bridge. Aft of this house she has a long trunk cabin, with about 3 feet of deck space on either side. There is a large skylight over the engine room and one over the owner's quarters in addition to the ports and small oblong windows in the sides of the trunk. This arrangement gives unusual ventilation. One of the most notable features of the yacht is the careful way in which the ventilation has been worked out.

Aft the deckhouse is the bridge deck, at the after end of which is an athwartship observation seat. This arrangement has proved very popular. In addition to the bridge she has a flush deck aft, with ample room for chairs. Directly aft of the forward bulkhead is the crew's toilet room. This opens into the forecabin, in which are four berths for the crew, companionway to deck. Crew's quarters are light and airy, having full headroom. Following this room is the captain's and engineer's room, with lockers, bureau, etc., and communicating with their toilet room. On the port side is the mess room. These rooms are followed by the galley, which is the full width of the ship, has a coal range, large ice chest and the usual dish racks, etc. Galley is directly under the dining saloon. Following the galley comes the engine room, which is enclosed in steel water-tight bulkheads. This room has two large ventilators in addition to a skylight and small windows and ports at the side of the trunk cabin. There are coal bunkers on either side of the room, having sufficient capacity for extended cruises.

The owner's stateroom follows the machinery space, and is separated from it by a double bulkhead, so as to deaden all noises. This room extends the full width of the ship, having a berth on either side, dressing table, bureau and ample locker space in addition to two chests of drawers. The owner's room communicates with the bathroom. Saloon is aft of this room, and is also the full width of the yacht. In it are a desk, table, transom



S. Y. Talofa, Owned by Mr. G. G. Peters, Boston, Mass.



Suzanne. Designed, Built and Engined by the Gas Engine & Power Co. and Chas. L. Seabury & Co., Cons., for Mr. L. J. Bell, Lake Charles, La.

seats and ample locker space. At the after starboard end of the saloon is a companionway to deck. Underneath the companionway and stairs there is an unusually large closet. A passageway leads from the saloon into the guest's room aft. This room also has a berth on either side, and communicates with another toilet room.

The yacht is of heavy construction, her keel being of white oak, as are her stem and stern-post. The frames are also white oak, double-sawn. The planking of yellow pine, and she has galvanized fastenings. She has four bulkheads—collision bulkhead forward, bulkhead at each end of the machinery space, and partial bulkhead in way of the strut. All these bulkheads are of galvanized steel. At each side of the engine room there is a fore-and-aft steel bulkhead forming the sides for the coal bunkers.

The rail, hatches, bridge, deck, companionway, etc., are of teak, and are of unusually substantial design. The plumbing is of the very best. She has hot and cold water throughout. The yacht is heated by steam, and has a most complete electric light plant, which has proved very satisfactory.

Propelling machinery consists of one triple-expansion, three-cylinder engine, with keel condenser. She has a Roberts' water-tube boiler, and has shown a speed of better than 12 knots an hour.

• • • SUZANNE

THE illustration above shows the gasoline launch Suzanne, designed and built by the Gas Engine and Power Company, and Charles L. Seabury & Co., Cons., Morris Heights, New York City, for Mr. L. J. Bell, of Lake Charles, La.

The principal dimensions of this boat are 45 feet over all, 10 feet 6 inches breadth, 3 feet draught. The hull is constructed in a thoroughly first-class manner, with oak

stem, keel and frames, white cedar planking, copper fastened and riveted throughout. There are four watertight bulkheads. Suzanne is what is known as the midship deck type of cruiser. Forward there is an exceptionally large compartment containing galley with alcohol stove with oven, white enameled sink and berth for engineer. The engine is a four-cylinder, four-stroke, 6-inch by 6-inch Speedway of 32 to 40-h.p., located at a point so that the clutch comes under the midship deck, it is all handled by the helmsman. There is a large ice-box which is filled from the deck. Ample locker space for dishes and cooking utensils is provided. A trunk cabin is shown aft. In the forward part of same is saloon, with berth on either side, wide enough to sleep on without extensions. This is provided with spring, hair cushion. At the forward end of this saloon, on the port side, is a complete toilet room, and on the starboard side is passageway to engine room. The stateroom is aft of this, and has a berth 6 feet 6 inches long, 4 feet 3 inches wide on the port side, while on the starboard side is an upholstered seat, with lockers underneath. Between the saloon and stateroom is a wardrobe on each side. All the inside joinerwork is mahogany finish, while the outside joinerwork is of teakwood. Either side of the companionway is a seat. There is a deck alongside of the house, also aft. The boat is very handsomely finished and furnished throughout, carries a small boat, awning, and all the necessary equipment. A speed of 11 miles per hour was attained on trial trip.

Suzanne was shipped on December 3d via Morgan Line steamer to Galveston, and will run from there to Lake Charles, La., via Gulf of Mexico and the Calcasieu River.

This is the sixth Speedway boat that Mr. Bell has had and a duplicate of the boat is now being finished at the Seabury Works, which will be exhibited at the Power Boat Show in New York next month.

INTERNATIONAL AVIATION MEET

J. Warren Sheppard



INTERNATIONAL Aviation Meet: this was the magnet that drew me to Belmont Park to see some wire and canvas float through the air. I paid my entrance fee, and with a cigar tilted at 45 degrees strolled along the long, picturesque avenue, arriving at the grand stand.

One look around, I saw sheds, bunch of flags, signal posts and a score board. About 30,000 people were on hand. I walked around, carrying my little note-book and pad, wondering what I could see to put on them. Thought I ought to get a sketch of the grand stand first, for if anything flew around there, I could use it for a background. So I started in with my pad. I saw some long pieces of trestle work, with red and white squares and a post on top, so down they went. I could find out later what they were. Probably they belonged to the old horse-races, but some aeroplane might fly around them, so I carefully finished the sketch. The only thing left was a large field of grass. I knew I could get a good sketch of grass at home, so I let that slip by. Peanut and popcorn men were very much in evidence, but as my work was serious, I had to eliminate that opportunity. I could hire a camp-stool for 25 cents and sketch some cirro-stratus clouds—but what's the use of that? I could get them from prints in the hydrographic office. I was worried, as time was slipping, and I had no stuff started for the editor. Just then I saw a little forest across the field. Down went the forest. That made another background, or underground. I had three now, so was feeling more happy.



I bought a program. Now for information. Only names of the aviators and their numbers, twenty-seven in all. There were the signals, too. At least I could know the names of the aeroplanes and the fliers. The only thing for me to do was to get in conversation with some stranger. Surely, out of 30,000 I could find some satellite of the brain trust.

I planed through the fleet of sightseers, but those who looked good to me seemed too stiff to approach. At last, getting desperate, I asked a fellow for a light, at the same time offering him a smoke. He took it.

"Interested in aeroplanes?" I asked.
 "Rather," he answered.
 "Seen much of them?" I ventured.
 "Flying for eight years," he said, as he puffed away on my cigar. I was about to spring that one myself, but he was too quick for me.
 "Good!" said I. "What machines do you—er—prefer?" (I used the plural.)
 "Any," he retorted.
 "Where have you flown to?" I gasped.



"All over," he responded quickly.
 "Know all about the engines?"
 "Nothing."
 "Who taught you?"
 "Myself."
 He was too communicative, so I nodded and left that bureau of information.
 I hired a camp-stool, walked around a distance, and planked down near a kindly-faced man. I had had experience, so did not hesitate to fire away. Just getting ready for my attack, when all arose as one. Some one was tuning up his machine.

"What are those sheds over there?" I asked.
 "Hangars. They keep the aeroplanes in them. Used to be horse stables. All painted green now. You can see the names of each aviator painted over the doors of each hangar. All have their country's flag flying. Looks pretty, don't it?"

"I see sixteen hangars. What are those tents to the right of the hangars?"

"They belong to the Wright Bros. Those fellows really make the affair a success. That Frenchman, Santo-Dumont, was a beaut tho'. He's given up flying, I think."

"Is he here?"

"No; he's quit flying for good. France has other representatives. The Wright Bros. have three machines here, and they are large. It would occupy too much space to use the hangars; besides, they're full; forty of them over there."

"Forty, really?" I answered.

"Yes; the Wright, Curtiss, Blériot, Farman, Roe and others."

In the distance the whirring of a propeller was heard and every head turned. Up from my stool and mine took the same course.

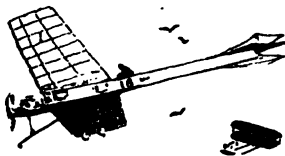
"That's a Wright," my new friend said; "it's a beauty. All their machines are painted aluminum color."

The twin-propeller Wright suddenly scooted along, and gradually and as graceful as a bird soared upwards. The sun hit it, and little bursts of fire seemed to flash each second. Around the track it came, flying over my head, everybody cheering. I forgot my pad. I threw my hat as far in the air as I could. Pretty soon the aeroplane flew around the track again. I got it this time. It had number 15 in black, on the under plane. Another shot up in the wake of the other. It swung by the flagpost like a huge seagull.

"What are those trestled flagposts they round as a mark?" I asked.

"They're called pylons," he replied, without lowering his skyward gaze.

I have often thought how I would like to go up in an aeroplane and be captain of my own air-boat. As I looked at the two going higher and higher, I wondered if I would be happy in one. I was undecided. I sat down again, still keeping the back of my head on a parallel with the ground. I looked over my program and found they were after the altitude record. A forty-mile wind was blowing, with strong chances for an increase in velocity. They were bucking against the aerial Gulf-



stream, apparently, making little headway. In fifteen minutes they could hardly be seen.

"They're up about 6,000 feet," my friend remarked.

"How can you tell?" I asked.

"That's only a rough estimate of course. They figure the altitude by triangulation. The aviators, for the altitude flights, generally carry two or three Barographs, one strapped to his wrist. He can tell, himself, what altitude he has reached."

By this time the two machines were out of vision. A cloud had completely enveloped them.

"Another!" was the shout.

Up again I bounced. One was just leaving the ground. At the height of thirty feet he circled the course. The machine looked like a tin canoe painted red with two large wings attached. The wind was so strong it was traveling almost sideways. At the end of the track he starboarded the helm and commenced to beat up to the pylon. It looked nearer to nature than anything so far. The driver, seated about two feet aft of the wings, operated the wheel. The wheel is to starboard and vertically placed.

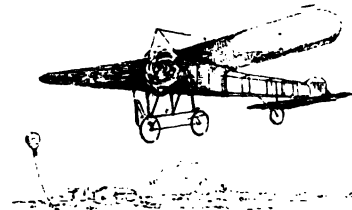
"That's Latham's Antoinette monoplane," he said. "You know Blériot crossed the English Channel in a monoplane. When he landed near Dover Castle after his flight they marked the spot, and the committee later put a stone image of the machine there in honor to Blériot. His 50-h.p. motor can make sixty miles an hour with the wind a hundred, if it's blowing hard enough. Look at Latham take that curve! Can you beat it? He's after the hour-speed prize."

"Great, isn't it?" I said.

"He is making a good ninety knots now," he added.

"Is it possible?" I gasped.

The wind gradually died down, and much hustling was in evidence at the hangars' row. Machines were wheeled out by pairs. A small one with yellow wings started off. It looked like a large fly as it buzzed along, keeping an altitude of only fifteen feet. The air chauffeur was sitting under the colored wings of his craft. It is called the "Mud Hen."



"He's giving her gowdy," I said, as he started his second lap. "What kind is that, anyway?"

"It's a Demoiselle, another French one. Don't he fly some? He certainly is hiperin'."

At times it would buck a trifle. The fellow was strapped in, swinging to and fro as if he was in a suspended basket. His engine commenced to miss.

"That engine isn't working any too well," I said.

"I know; it's a new one, and he is trying her out." After making three laps, it swerved over to the hangars, landing very prettily in front of its shed.

"Wow, look at that!" I yelled.

Three had left terra-firma at once. After making the course once, they steered off towards the West.

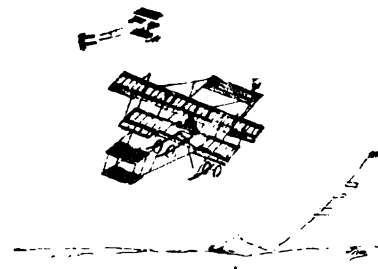
"Where are they off to?" I asked.

"Cross country run. Ten miles off there a balloon is anchored. They round that and return. A prize for the quickest flight."

"Won't a man lose his bearings up there?" I inquired.

"Easily, I suppose, but they generally figure out beforehand on the map. Some steer by compass. Mois-ant, a month or so ago, crossed the English Channel in a storm, raining like old Nick, too. He couldn't see a thing. He steered by a compass."

"Too bad he didn't do it before Blériot. I suppose he received half the credit Blériot did?"



"Of course. When one does a thing it's not so hard to duplicate his achievement; it seems that way to me."

"I guess that's right, but it was a great stunt," I said.

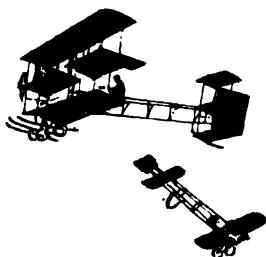
Some one yelled they saw a speck in the distance. Sure enough, it loomed up. Nearer and nearer it came, and at last flew around the course twice; then, like a swallow alighting, volplaned down, dancing along the grass, until it came to a full stop. I looked at the score board. He had covered the 20 miles in 26 minutes.

The others hove in sight, and before you could realize it, were maneuvering past the grand stand.

Down I flopped on the chair, finishing the sketch of the Demoiselle and a Blériot.

"Say, those propellers look pretty small, don't they?" I asked.

He smiled and said, "I guess you'll find them about eight feet long; most are made out of ash. Have you noticed that the foreign aeroplanes have the propeller in front? It pulls them, while ours are aft of the engine, pushing forward."



"Lots of different engines, I suppose?"

"You're wrong there. The only truly reliable one I know of is the Gnome. They're light as a feather compared to our marine motors. It's doubtful whether Glenn Curtiss would have won the trophy at Rheims, if Blériot hadn't used the Anzani motor that time."

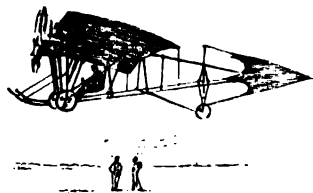
The aeroplanes started off again, shooting up all over the hangar proximity. Twelve in the air at once. It looked as if a collision was unavoidable. To get out of the way of a rival air man, Drexel flew over the grand stand. I got a quick sketch of that.

"Look at that little bird," my friend remarked. Sure enough, a bird flew around the edge of the stand in the wake of Drexel. The bird flew back and forward and made a sudden downward dive as if to show he was capable of some air stunts. The crowd cheered the sparrow to show they thought he did well. He then shot off to the east, showing his motor was in prime condition.

"That wasn't bad, was it?" I remarked.

It was getting dark gradually. I asked my acquaintance where the two were that went up first for altitude. Impossible to locate anything. I put his field glasses in use, but of no avail. I sat down to wait for them.

A sound that nearly took me off my feet, some kind



of a monster raced by, thirty feet over my head. It was getting so dark I could not see at all. Around the course it came again. I could hear it approaching.

"Who in the de—il can that be?" I asked.

"That's a Curtiss biplane; Hamilton is sailing it. He is the chap who flew to Philadelphia and back. It turned turtle with him in San Francisco a month ago and laid him in the hospital. He can't run it at full speed, can't let her out. He tried to the other day and the radiator hit him in the back. He's putting her in the finals. He is one plucky chap."

It was dark now. Nothing seen of the altitude seekers.

"Lots of current up there," I said, as I lighted a new butt.

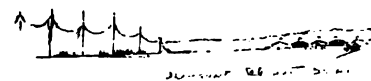
People were leaving in a rush to catch the cars. I sat on my hired camp-stool waiting for the aerial truants. I had a good number of sketches, so was contented, besides I wasn't working the dailies and had mine own time. "Bet something's gone wrong. Look at that blaze starting in the middle of the field!"

My companion, still sticking to the scene to keep me company, said it must be a landing mark they were making for the men still up in the air.

"You must be right; I'll make a note of it," I said.

Sure enough, pretty soon I heard the whirr of a propeller. I jumped up, over the fence, running to the center of the field. They had emptied about ten gallons of gas on the ground and ignited it. I jumped back just in time to escape being rammed amidships by an alighting plane. It rested on the earth as lightly as a toy balloon, skidding along a short space, then coming to a full stop. Out jumps the air-pilot. I rushed over to be the first to congratulate him. He took my hand, and all he said was, "Is Johnstone down?"

I knew what he must mean, so I answered, "No!" He walked away. In another moment I heard a similar whirr about a hundred feet off. Over I ran, arriving in time to see him skid to a mooring. I quickly congratulated, he answering in full, "Is Hoxsey down?"



"Just this moment," I replied. "What was your altitude?"

"7,000 feet."

"Whew!" I found out later that Johnstone had made 9,714 feet, beating the world's record made by Wynmalen, the Dutch aviator, which was 9,186 feet, last October 1st, in France.

Off he walked towards the hangars, blowing and clapping his hands together. It must be cold up there. I wasn't too warm myself. I walked briskly to the other aeroplane. Johnstone had beat it and my friend, too. I shoved my pad and note-book in my pocket and turned my nose homeward. I made up my mind to be on hand Sunday to see that flight to Statue of Liberty.

Sunday was a beautiful clear day, so I started out early. My friend was on hand. We swapped smokes.

"Great day for that Liberty flight," I said, after shaking hands.

"Fine; wind not over five miles."

We both got the inevitable camp-stool. I could see they were busy over at the hangars.

"Say, do you know anything about this aeroplane stuff of a few years ago?" I asked him.

"Well," he replied, "I know that around 1896 a fellow name Octave Chanute, an engineer, assisted by Herring, experimented with the first full-sized aeroplanes. They had two surfaces resembling the present type of biplane."

Chanute trussed two surfaces together to get strength and stiffness. Later on he used upright posts and diagonal ties, known as the 'Platt truss.' Herring devised the elastic attachment for the tail. A hundred or more glides were made with it, at descending angles of 8 to 10 degrees. It became known as the 'Chanute type' of glider. It was improved upon by the Wright Bros. They took off the tail as an appendage, placing the rudder in front. They also warped the wings to give equilibrium. They took up Lilienthal, too, and using both together made improvements. The Wrights are the real pioneers of the air."



"How about the French machines?" I asked, after making note of what he told me.

"The present Blériot aeroplane was never safe until after the ailerons were used on the wings. The French have developed a remarkable advance in flying out of the American evolution."

"Hello, there's a Roe triplane coming out! I've seen those before. They seem to have too much canvas aboard," I volunteered. Roe flew around, soon followed by Hamilton in a Curtiss, then up comes Wright's Baby-grand.

"That makes a pretty sketch you've got there. I'd like to have it when the plates are finished," he said.

I put down his address. ("Will he get it?")

"That Baby of Wright's is quite a kid, eh?" he said. "It made 85 miles an hour the other day. Latham's Antoinette quit when the Kid chased him Thursday. They haven't tried it out much yet; only Brookins and Wright fly it. Look at it go!"

They were now scooting all around.

As my friend got his binocular on the score board, he told me that the Liberty flight was announced. "Here comes one!"

"Who is it?" I asked; and we both climbed on our stools.

"Count De Lesseps in his 50-h.p. Blériot."

Up he came, circling the course once, and off he shot, crossing the line at 3:05:46, official time.

"How long is the flight?" I asked.

"It's 33 miles as the crow flies; 16½ each way. He's got to get a high altitude, flying over the city. The tall buildings cause currents that might put him out of business."

"There's another!" I shouted.

"The Englishman, Grahame-White, in his 100-h.p. Blériot. He won the speed flight with the same machine, making 62 1-10 miles in one hour, one minute and four seconds, clipping Morane's record made in Bordeaux in a similar 100-h.p. Blériot. He made 64-mile rate on five laps. Le Blanc would have beaten him only for neglect on the part of his mechanic, who didn't fill his gasoline tank. He crashed into a telegraph pole, going at a 70-mile gait. He ripped off his star-

board wing, and, luckily, only suffered a few cuts, otherwise he would have put it all over Grahame-White."

"Look at White now!" I said.

He circled the course once, and off he flew after De Lesseps. Every one watched him out of sight. The announcer megaphoned White's starting time as 3:08:47.

Just then I thought I recognized the announcer, an old friend of mine. I caught him as he was turning to the judges' stand.

"Hello, George! Can't you get me over to the hangars? I'm after news for the Skipper."

"I guess so; I'll see."

As he went over to ask, I ran back to say so-long to my friend.

"Come along," he shouted back.

Off I beat it to aeroplane row, arriving there, the wind all out of my sails, and everything apparently in confusion. One of the judges was just stopping in front of Moisant's hangar.

"No one is in this event to represent America. Get into it, will you? you have thirty minutes to make it;" and off he autoed.

Moisant was flabbergasted. He had disabled his aeroplane that morning by running into a Farman biplane which was anchored on the field, contrary to all rules of the Aero-Club. Aviators crowded around. I was in the bunch. Moisant's brother came running over yelling, "Get in it, my boy!"

Moisant answered he'd give \$10,000 to do it. "I've only that little machine left, and I can't beat a 100-h.p. with it."

"That's all right, then!" the brother roared. "I bought Le Blanc's 50-h.p. Blériot for you. He's on his way here now to close the contract. I got it for \$6,200."

Moisant jumped to his feet clapping his hands like a child, called to his mechanics to wheel it out and oil her up. He only had a short time to make a start.

Hoxsey, the altitude seeker, came along and said it



was the same kind of a machine Moisant crossed the Channel in. Le Blanc showed up then in an auto. The coin was handed over, and everything satisfactory.

I got a sketch of Moisant's machine and tucked it away.

While they were rushing around, preparing the aeroplane for the Liberty flight, a speck loomed up in the distance. In no time De Lesseps swooped down between the two pylons, crossing the finish line, and perched itself on the lawn.

"Here's White, too!" yelled the bunch of aviators.

The Englishman was coming like mad. Across the



Efra, 56 Ft. O. A., 40-H.P. Lamb Engine, Owned by E. C. Blum, Brooklyn, N. Y

line, around the track and down in front of the grand stand he stopped.

De Lesseps and White were hustled into an auto and chugged by the stand, crowd yelling themselves hoarse.

The excitement attending the return of the champions just echoed away when Moisant was seen to spring from the ground at 4:06:56. Driving the craft as if it was shot from a cannon, and as if he handled it all his life, he circled the track and turned due West. Within two minutes it became dim. It was realized the intrepid sailor was driving straight over the city of Brooklyn. Any moment was expecting the news of a catastrophe.

"Do you think he'll make it?" I asked Hamilton, as he limped by.

"Hope he does;" and went in his hangar.

It seemed as if the little flier had only left when he was seen as a blur in the distance. At first it was a doubt whether it was an aeroplane or a bird. It grew larger, and was seen to be the machine, homeward bound.

"Isn't that wonderful?" I yelled, talking to the air.

With a whirr the craft came swooping down, dropping more every second, passing the pylons at an altitude of 300 feet. Around the course once and alighting at the far end of the field, jumped out and strolled over to the judges' stand.

It was announced he had beaten White's record flight by 43 seconds.

The multitude wanted to climb over the gratings, to hug the little five-footer who won the glory for America—a Charlie Barr of the air.

It was estimated De Lesseps and White, going along the region of Coney Island, covered 40 miles, while Moisant did not fly over 35 miles; that included the 1½ miles around the course at Belmont Park and the mile turn around Liberty Statue. His finish was announced as 34 miles in 38:84.

Johnstone came along then and said Moisant's barograph showed altitude of 2,860 feet at Liberty. He had coasted all the way back.



Corinthia, 85 Ft. O. A., Twin-Screw, Six-Cylinder, 6½x8 Speedway Engines, Owned by J. Adolph Mollenhauer, Bay Shore, L. I.

GRAND PRIX DE ROME

THE Touring Club Italiano who are promoting a Long-Distance Race from Venice to Rome have asked Mr. Thomas Fleming Day to act as their representative in this country in obtaining for them some American entries. The race will be started at the end of June from Venice and will be one of 1,200 miles, divided into eleven stages. These daily runs will be from 86 to 135 miles, the boats stopping each night at some prominent port. The course leads down the Adriatic through the Straits of Messina and up the west coast of the Italian Peninsula finishing on the River Tiber off the celebrated Castle of San Angelo.

The time of the cruise will be fifteen days, three of which will be spent at Rome, when a series of races will be held for prizes amounting to \$2,500.

This race will be open to steam yachts as well as gasoline-driven boats and the grand prize is a magnificent bronze showing the Mother of all Rome suckling the twin founders, Romulus and Remus. The following are the general regulations governing the cruise:

The special organizing committee of the Italian Touring Club and the Commemorative Festival Committee have decided that, in order to ensure as far as possible the safety of competitors in the Turin-Venice-Rome cruise which they are organizing and to ensure a minimum of risk and breakdown as well as to encourage the building of wholesome types of seagoing power yachts in Italy, all boats entered for the Cruise must answer the following conditions of construction and equipment.

1. Any type or kind of mechanically propelled vessel is eligible to enter; no restriction being placed on the type or kind of motive power—steam, electricity, internal combustion or explosion engines—but the boats must be of sound construction, fitted and equipped as follows:

(a) The over-all length of hull shall not be less than 29 feet 6 inches (9 metres) excluding rubbing strakes, mouldings and rudder; unless the rudder be the propeller.

(b) Boats must be decked for at least two-thirds of the area circumscribed (in a horizontal plane) by the gunwale. When boats have cockpits or wells, these must be entirely separated from the cabin accommodation by water-tight bulkheads or doors. A sketch plan (to scale) of the deck must accompany the entry form. In addition, the boat must be rendered unsinkable by an efficient system of water-tight bulkheads.

(c) The accommodation must include a certain number of comfortable sleeping bunks efficiently protected from weather and water; the number of bunks to be equal to the total number of persons on board, less one. During the cruise a boat must be carried of dimensions as follows:

If persons aboard number	four	five	six or more
Length over-all minimum	7' 11"	9' 10"	11'
Beam minimum	3' 4"	4' 4"	4' 6"
Depth at 1/4 beam	1' 5"	1' 7"	1' 8"

(d) The motive power must be sufficient to impart and maintain a minimum speed of 8 nautical miles per hour.

(e) Efficient means for going astern to be provided. Free exhaust is prohibited in the case of internal combustion engines and boats shall not carry any exhaust cut-out or other means of eliminating silencing gear.

(f) Bunkers or fuel tanks must be of sufficient capacity to allow the boat to cover a distance of at least 270 nautical miles (500 kilometres) at full speed and without stop. A sufficient supply of lubricants and other necessary engine stores for the same distance must also be carried.

(g) With the exception of steam yachts and vessels exceeding 65 feet 6 inches (20 metres) in length all boats must carry auxiliary sail together with masts and



Chart of the Course of the Grand Prix de Rome

necessary rigging for hoisting same. The total area of such auxiliary sail shall not exceed one-sixth of the square of the length nor be less than one-tenth of the square of the over-all length.

$$S A \text{ not less than } \frac{L^2}{10} \text{ nor exceeding } \frac{L^2}{6}$$

where S A equals Sail Area and L is length over-all as above.

(Example: A 40-ft. boat must carry auxiliary sails between 166 and 266 square feet total area.)

(h) Two efficient bilge pumps must be fitted, one worked from the engine, the other hand worked; both of sufficient capacity to empty bilges, cockpits or wells rapidly. An efficient whistle or syren audible at least 1 mile under fair weather conditions. Regulation running and riding lights. Safety lamps for coal bunkers or fuel storage spaces. A tiller with means of fitting same to rudder head. Two anchors with sufficient warps or chain. A fire extinguisher ready for use and a sack containing at least ½ cwt dry sand. Efficient compass with lighted binnacle, and efficiently corrected for de-

viation. Complete set of International Signal flags. Life belts or buoys of efficient pattern, at least one for every person on board. Charts, sailing directions and navigating instruments ordinarily used in coastal navigation; also a log book which shall be entered up each day. Ship's papers and proper clearances for foreign cruising. Provisions and water to be shipped prior to the start for each stage, in sufficient quantity for all persons on board and for six days.

2. The crew shall consist of not less than four persons throughout the cruise. Of these, one must be an engineer and one a professional seaman.

3. During the whole cruise boats which are obliged to carry auxiliary sail shall keep their mast stepped, rigging set up and sails bent ready for hoisting at any time in case of emergency.

Full particulars of this race can be obtained by addressing the Executive Committee, Touring Club Italiano via Monte, Napoleone 14, Milano, Italy, or from Mr. Day, care of THE RUDDER PUBLISHING CO., 1 Hudson St., N. Y. City.



HURRAH'S NEST



"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



CORE SOUND

I AM just back from my trip, having gone as far as Beaufort, N. C. We found Core Sound very easily navigated by our boat, drawing only three feet of water, and I would suppose that a craft drawing not over five feet of water would have no difficulty whatever in making the run all the way through Core Sound, inasmuch as the channel is very carefully staked all the way from Harbor Bar Light to Beaufort; the only difficulty near Core Sound is in going over the bar at Harbor Island Light. We were told that the channel had entirely altered in the last few years, but the black Government buoy has not been moved, so that in coming from Pamlico Sound a boat should run toward a rough stake put there by the local fishermen, not unlike an eel pot stake which lies somewhat Southeast of the Light. A boat should run clear up fairly close to this stake, leaving it to port, and then go West by North some 300 to 400 yards toward two stakes of similar nature that are placed together, leaving these stakes to port. These stakes are just about Northeast of the Lighthouse. We did not know anything of this channel, and fearing to chance it over the bar without a pilot were fortunate in picking up a man who took us all the way through to Beaufort, though we found that a pilot beyond the bar was entirely unnecessary. This pilot is Mr. G. H. Gaskill, whose post office address is at Lupton, N. C. He has been on Core Sound all his life, and we found him a most excellent and careful pilot, and would gladly recommend him to any one who might be making the trip, and should feel the need of a pilot.

Westhampton, L. I.

WM. C. ATWATER.

A BRITISH COLUMBIA VIPER

THE pictures show a Viper built by Mr. H. Connor, one of our old subscribers in British Columbia. He says: "I enclose some photos of my Viper type of boat. She was built exactly after THE RUDDER design. The engine is a 12-h.p., with reverse gear; ribs ⅝ to ¾ elm; keels,



Viper in British Columbia

keelson and stringers fir; all planking and deck ½-inch cedar; brass-screw-fastened. Speed: No measured mile here, but I think fifteen or sixteen would be nearer the mark than eighteen miles. However, she is a great little boat for her size and horse-power."



Stern View of Viper

LAUNCH WITH AIR-COOLED ENGINE

THE photo below shows a very comfortable 30-foot day-boat built for Mr. John Wilkinson, Syracuse, N. Y., by the Skaneateles Boat and Canoe Co., Skaneateles, N. Y. Mr. Wilkinson had installed in this boat a six-cylinder 24-34-h.p. Franklin air-cooled engine. With the engine developing 24-h.p. the boat attains a speed of 18 miles per hour; with the engine at its maximum, a speed of 20 miles has been attained. The boat is handsomely finished in mahogany, engine being placed in forward cockpit, with full control at bulkhead.



Comet, Owned by John Wilkinson, Syracuse, N. Y.

DETACHABLE ENGINE

A DEVICE which is gaining favor the world over is the detachable engine for driving rowboats and canoes. The two boats shown in the pictures are being driven by the Evinrude engine, a device which has been recently



Auxiliary Schooner Mascot Ready for Launching

put upon the market. It is light and effective and can be readily detached and carried home or not.

THE SCHOONER MASCOT

"AN interesting ceremony took place one day recently in the shipyard of Messrs. Bulloch Bros. & Co., Ltd., Lower Pazundaung, Burma, where a large and distinguished party had collected at the invitation of Messrs. Attia and Maneckjee of the East Coast Trading and Navigation Company, to witness the launch of that company's auxiliary power schooner Mascot. The vessel, which when completed will be the largest of her type as yet in the East, has been built by Messrs. Bulloch Bros. for the above company's trade between Rangoon, Nicobar Islands and the various islands in the Mergui Archipelago, and is specially adapted for the carrying of oil and petrol in tins. Her dimensions are: Length 128 feet, breadth 26 feet 6 inches, depth moulded 10 feet, and she has a carrying capacity of 300 tons dead weight. The hull is of the composite type with framing of steel heavily planked with teak. The main deck is also of teak laid over steel beams and is flush all fore and aft with a heavy sheer forward. A steel bulwark, standing 3 feet high above the main deck, is fitted all round the vessel. The European accommodation is fitted up in a large airy cabin under the navigating bridge amidship, and comprises two double-berthed staterooms, bathroom, lavatory, chart room and mess room. The crew is accommodated in a large deckhouse fitted up aft. The vessel will be rigged as a schooner, having two pole-masts with gaffs, booms and foresails. Power winches and all the latest modern appliances for easy handling of her 4,000



Showing Evinrude Detachable Engine in Operation on Yacht Tender and Service Boat



Mascot, 100-H.P. Wolverine Engine

square feet of canvas will be fitted. Electric light with fans in the cabins will be installed, power being obtained from a separate Aster generating set. This, with the propelling machinery, is being supplied by the owners and is being fitted up by the builders.

"The propelling machinery is of the four-stroke, three-cylinder 100-h.p. Wolverine type, for whom Messrs. Attia and Maneckjee are agents. This is fitted up in the after end of the vessel. Large fuel tanks with oil capacity sufficient for fourteen days' continuous running, if necessary, are fitted up in a separate compartment in the after hold. The engine when in use in calm weather at sea, is expected to drive the vessel from 6 to 7 knots per hour.

"The vessel as viewed from the shipyard previous to her taking her initial plunge, looked very handsome with her bunting and many colored decorations. As she left the ways she was christened Mascot by Miss Marian Attia, the tiny daughter of the part owner. Punctually at four o'clock the orders were given for the launch, the last supports were knocked away and amid loud cheers the vessel glided down the ways into the water. Mr. Smart, the foreman shipwright, was responsible for the work connected with the launching, and it is to his

credit to say that there was not a hitch of any kind. The launching finished, the company adjourned to the tennis court, over which a large marquee, gaily decorated, had been erected. Here refreshments on a liberal scale were served, the while a Burmese *anyein pwe* was in progress. Each visitor was also presented with an umbrella, parasol and fan.

"As showing the progress recently made in the adoption of gasoline-driven vessels in favor of steam as has hitherto obtained in Rangoon, it is interesting to note, that Messrs. Attia and Maneckjee have just had converted by Messrs. Bulloch Bros. their twin-screw 85-foot steam launch Rome Pasha, now Mathein, and have fitted her with twin 35-b.h.p. Wolverine engines. This has proved a great success not only in speed and in draught gained, but in deck space and working cost.

"Messrs. Bulloch Bros. are just completing for the same firm a beautifully modeled twin-screw, schooner-rigged, gasoline-driven passenger launch named Mahla. Her dimensions are 100 feet by 16 feet by 7 feet and she is fitted with twin 75-b.h.p. Wolverine engines, and is intended for passenger traffic on the Delta. Messrs. Attia and Maneckjee contemplate building for their coasting trade more schooners of the Mascot type, but with double the power and carrying capacity, and also some large twin-screw double-deck gasoline-driven passenger launches for their Delta trade."

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PERTH FLYING SQUADRON, W. A.

"A HANDSOME silver cup was given by the editor of THE RUDDER quite some time ago for competition among Western Australia power boats, one of the conditions being that the course must be over 100 miles. The race was held on May 29, 1910, to Mandurah, and many of the competitors had their first experience of navigating on the sea by night. The cup had remained in the possession of the Royal Perth Y. C. for a considerable time, who passed it to the Motor Boat Association, who, in turn, last May handed it to the Perth Flying Squadron, who lost no time in organizing the race. At the rooms of



Challenger, 12-H.P. Standard Engine, Winner of the Long-Distance Race for Rudder Cup in Western Australia



Pug, 6-H.P. Smalley Engine, Second Boat in Race

the Perth Flying Squadron recently a smoke social was held, when the winners received their trophies. Approximately eighty gentlemen were present, the Commodore (Mr. Greere) presiding. A varied program was successfully carried out during the evening, including songs by Messrs. Crozier, Dures, Wade, Hicks, and T. Seale, a "sketch" by Mr. W. B. Scott, solo on gum leaves by Mr. Carr Boyd, conjuring tricks and chorus songs.

"After the Royal toast was honored, that of "Kindred Clubs" was proposed by Mr. Childs, and responded to by Messrs. F. R. Thomas (18-Foot Club), Gleadhill (Perth Dinghy Club), and Bird (East Perth Club).

"In presenting THE RUDDER Cup to Mr. D. Oriol and crew of Challenger, the Commodore said it was a great feather in their caps. The cup had only been in the possession of the Perth Flying Squadron about three weeks prior to the race and therefore they had little time to make preparations, otherwise, instead of seventeen boats competing, there would have been a considerably larger number. Nevertheless, one of the best powerboat races ever held in Western Australia had been carried out. Hitherto there had only been short races held, but he hoped that in future races would be run over a longer distance, say, to Fremantle and back, and perhaps take in Freshwater Bay also.

"In reply, Mr. Oriol expressed his gratitude to THE RUDDER for offering such a valuable trophy, which he valued particularly in view of the fact that during the past eight years he had never won an important race, though he had been "placed" on more than one occasion. He also referred to the capabilities of the crew.

"A memento of the race, designed by Messrs. Dawson and Easton, was also presented to the second boat (Messrs. Stirling, Wade and Crozier's Pug), and Mr. Crozier, the skipper, in acknowledging the gift complimented the squadron upon the expeditious manner in which they had carried out the race. The inaction of his club (the Royal) was to him inexplicable.

"A presentation of the Sandover Trophy was also made to Mr. R. Sundercombe, of Lewa, and a trophy for the final power race of the club to Messrs. Tomlinson Bros.

"Mr. T. Statham also proposed the toast of the Commodore, which was honored with enthusiasm, and in doing so he suggested that a race be inaugurated for qualified members along the lines of THE RUDDER Cup—not over such a long course, but a run round Rottnest or to the bay and back—and for that purpose he would present a cup of the value of £10 10s."

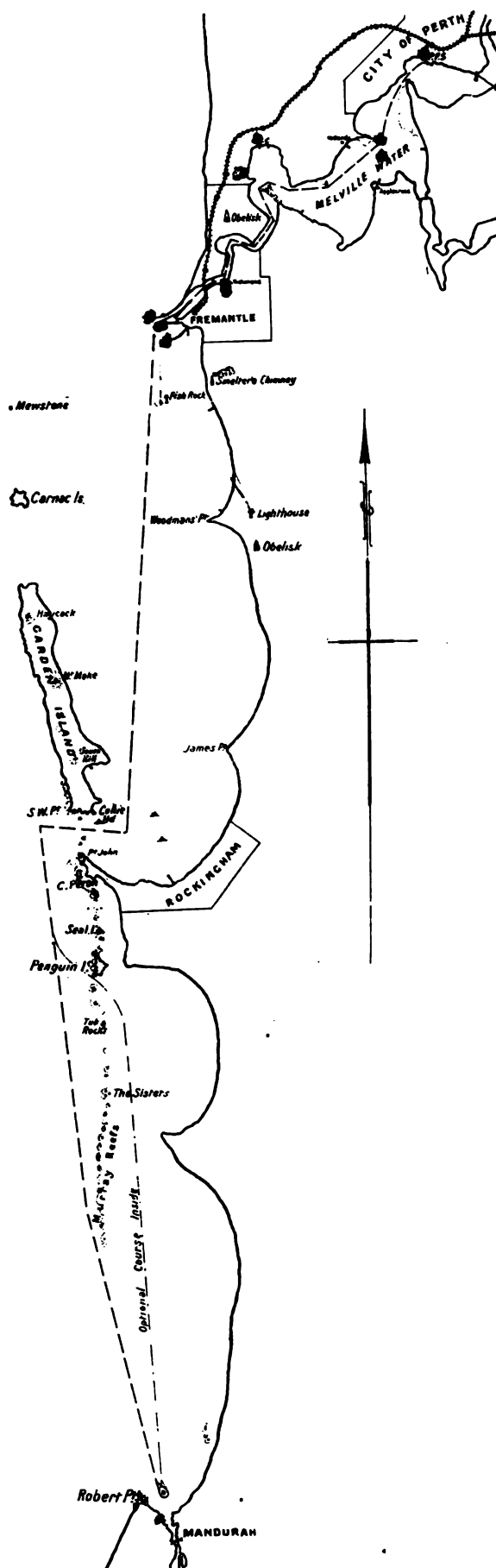


Chart of Course of Rudder Cup Race. 100 Miles in Length

KARINA

THE ocean-going cruiser shown in the accompanying plan was designed by Theodore D. Wells, for Mr. Robt. E. Tod, the well-known offshore yachtsman who formerly owned the schooner Thistle, which craft, it will be remembered, was a contestant for the Emperor's Cup in the race across the ocean. In this contest she was handled by her owner. The new boat is being built of steel throughout by the Staten Island Shipbuilding Company, and will be finished in time for use next Summer. As will be seen from the plans the craft is a three-mast schooner and has a sail spread of 16,000 square feet exclusive of light sails. Her lower spars are to be steel, into which the top masts are designed to telescope. The bowsprit will be of wood.

All exterior woodwork on the craft is of teak, the deckhouses being of steel with teak roofs. The deckhouses, however, are comparatively small and the craft practically has an unbroken deck fore and aft.

It is the intention later on to fit the craft with power for auxiliary purposes, but this installation will not be made for use during the yacht's first season. She will be equipped with steam plant with Almy water-tube boiler for the purpose of hoisting sails and furnishing power for the windlass, and also for the electric light plant, which consists of a Terry turbine and $7\frac{1}{2}$ -k.w. Deal dynamo. An auxiliary acetylene gas-lighting plant will also be installed and the boat will be steam-heated throughout.

The designer states that it was not the intention of

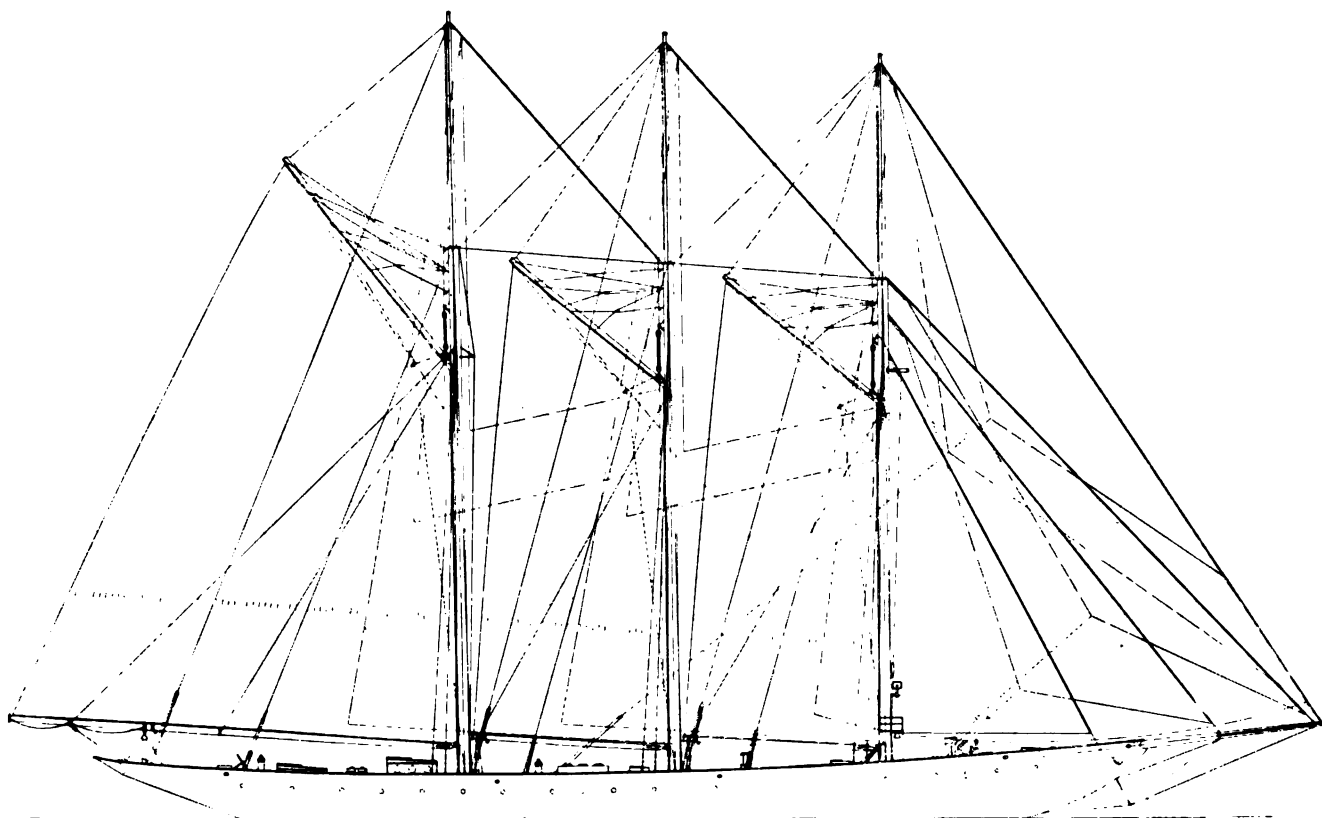
the owner to provide for a large number of guests, but rather to provide comfortable accommodations for a moderate sized party. The general accommodation is plainly shown in the plans, and it will be seen that the owner's stateroom is well aft and the full width of the ship. A smaller stateroom is also provided for the owner alongside of the companionway aft for his use when navigating the ship.

Six small boats have been provided, consisting of two 30-foot launches exactly alike in hull design but slightly different in general arrangement, as one is to be a service boat and the other for the use of the owner. The engines are 40-h.p. Murray & Tregurtha machines of the automotive type. These launches are carried amidships, forward of which are carried a 30-foot owner's gig, and a 27-foot bronze boat also for the use of the after guard. Aft there is carried a 17-foot service cutter and a light 18-foot dinghy.

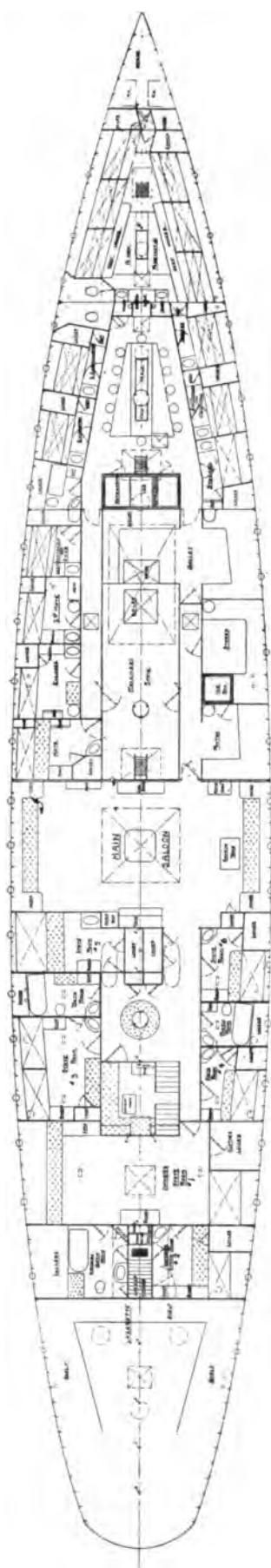
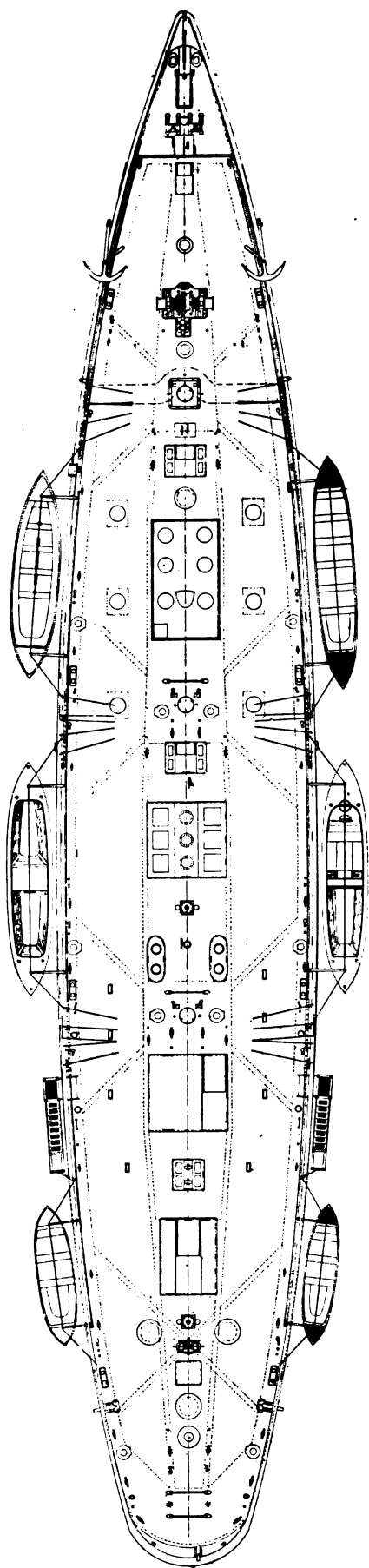
The owner has had a large and varied experience in offshore cruising and much of his experience is incorporated in the design of the new craft. She is nearly 200 feet over all and is a valuable addition to the offshore cruising fleet.

The general dimensions are as follows:

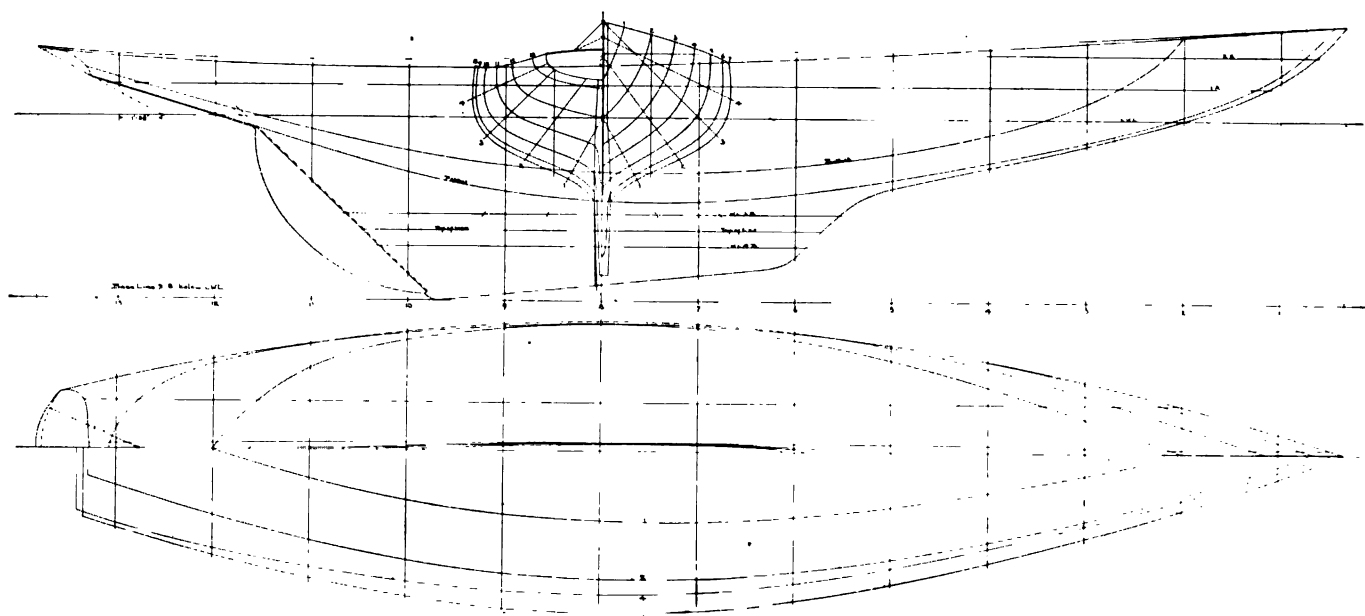
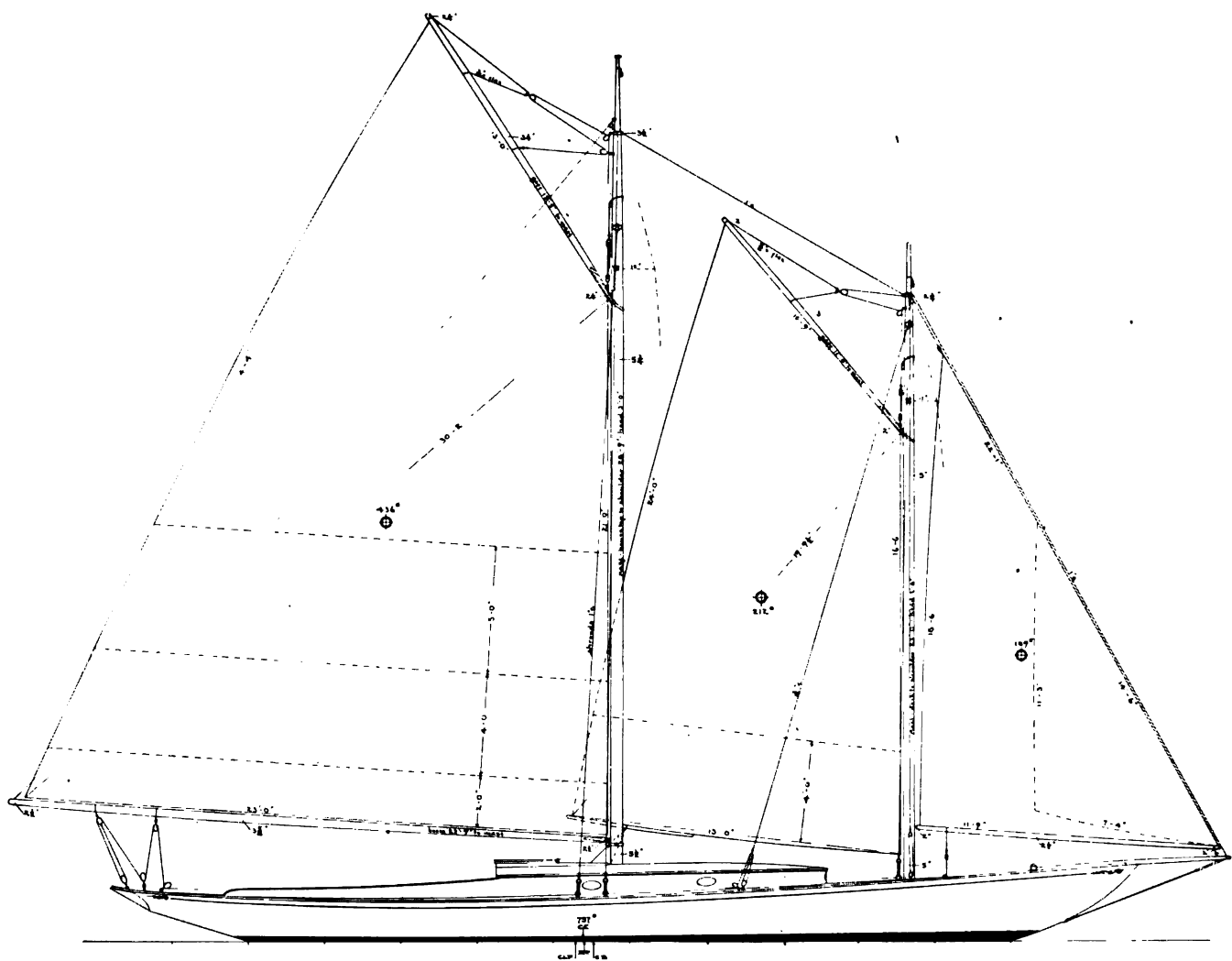
Length o. a.	198	feet	0	inches
Length w. l.	150	"	0	"
Breadth	33	"	$8\frac{1}{2}$	"
Draught	17	"	0	"
Depth	23	"	9	"



Ocean-Going Schooner Yacht Karina. Designed by Theodore D. Wells and Building by the Staten Island Shipbuilding Co., for Robert E. Tod, of New York City



Deck and Cabin Arrangement Plans of Ocean-Going Schooner Karina



Schooner Fame, 40 Ft. 6 In. O. A. Designed by B. B. Crowninshield, Boston, Mass., for His Personal Use



Fame

FAME

THE small schooner, Fame, was designed by B. B. Crowninshield for his personal use. The designer writes that his requirements were "the largest and fastest (regardless of her rating) boat that he could handle and take care of alone. One that would lie at her moorings with sails up, and that was strong and buoyant enough to ride out the occasional Northeasters to which my anchorage is exposed from May 1st until November 1st."

The headroom in cabin is 4 feet 6 inches and the accommodation consists of two full-length berths, clothes lockers on each side of companionway, with stove space, dish lockers, etc., under the forward end of house. Under the forward deck there is ample room for pipe berth.

The cockpit is of the self-bailing type and is large enough to seat comfortably four people.

The displacement of the craft is 12,900 lb and she has 3,200 lb of ballast on keel and about the same amount inside.

The designer states that the boat was a complete success and that two more boats are at present building from the same lines.

General dimensions are:

Length o. a.	40 feet 6 inches
Length w. l.	30 " 0 "
Breadth	8 " 1 "
Draught	5 " 8 "

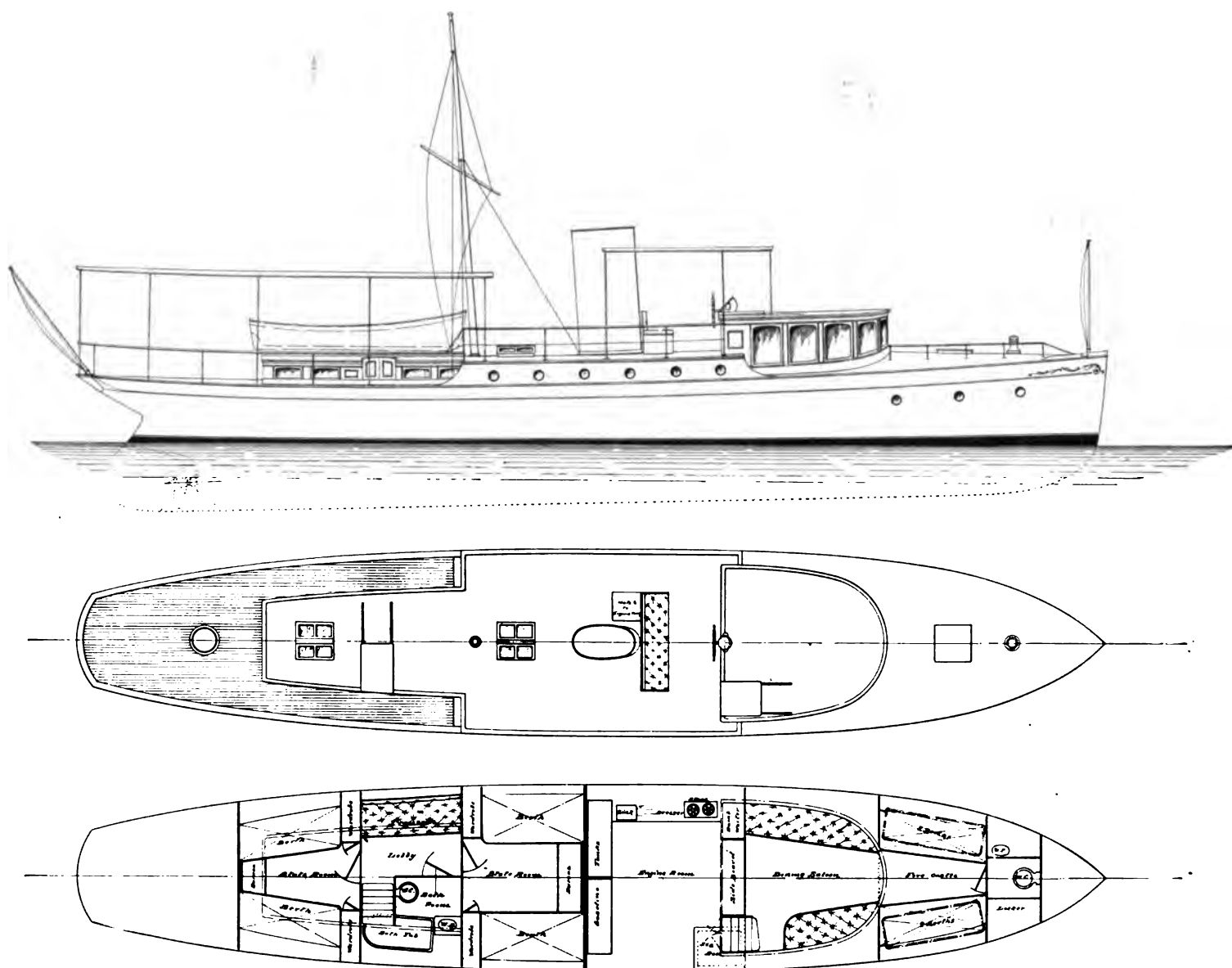
LEXINGTON II

THE Messrs. Cox & Stevens have recently placed an order with the New York Yacht, Launch and Engine Company, for an interesting type of power craft, to be named the Lexington II, this boat having been ordered for Mr. Henry P. Scott, of Wilmington, Del., who will use the boat in the neighborhood of Wilmington and elsewhere, for general cruising.

The motive power consists of two 30-h.p. Twentieth-Century engines, situated in the center of the vessel, and separated from the accommodation by two water-tight bulkheads, this compartment containing, in addition to the machinery, gasoline supply, which is sufficient to give the craft a radius of 750 miles, and also a large ice-box, sink, and kerosene range, the dimensions of the vessel being such that it is impracticable to have a separate galley.

The owner's requirements were that the vessel should be as seaworthy as possible for the given dimensions; that his accommodation should be ample for cruising purposes; and that he should have as good ventilation and as much good deck room as possible.

With these requirements in view, the designers adopted a type of boat having a practically plumb stem and steamer stern, in order to get the maximum water-line on the given over-all length. The sides amidships have been carried up, giving a flush deck the full width of the vessel for about one-third her length, the stack lands on this deck, affording ventilation to the quarters



Lexington II. Designed by Cox & Stevens, for Mr. Henry P. Scott, Wilmington, Del.

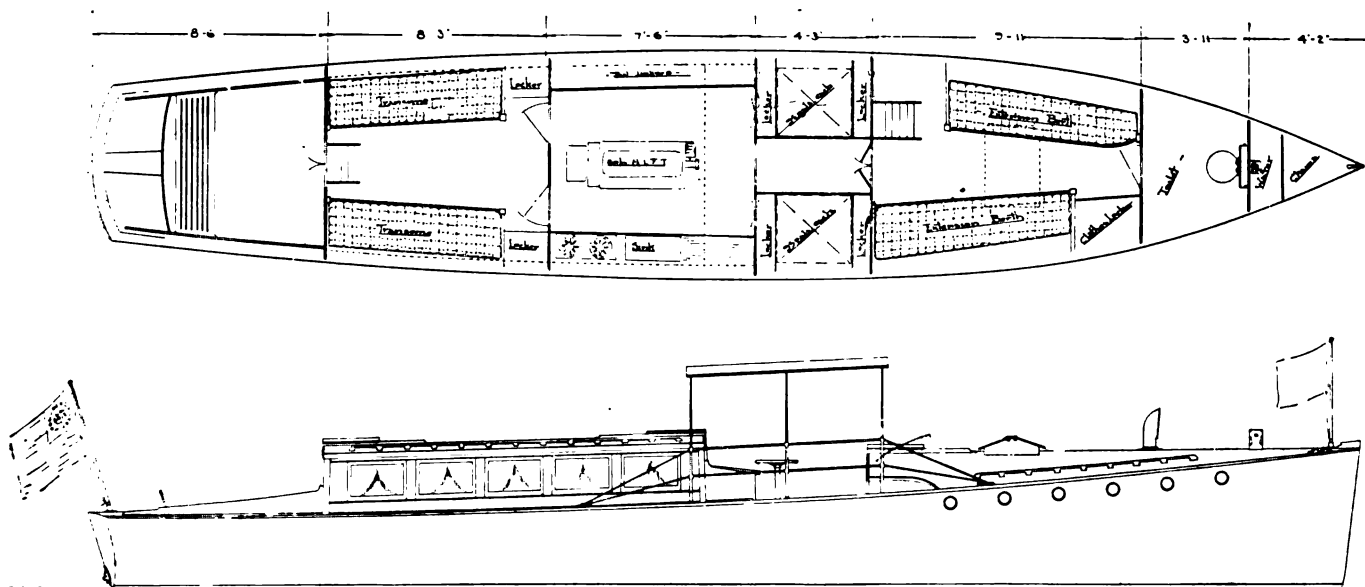
below and to the engine room, as well as being utilized for the exhaust. Aft of this raised deck is worked a trunk cabin to afford full headroom, light and ventilation to the after quarters. This trunk is narrow and has ample room on each side of it, while abaft of the trunk there is a roomy flush deck, so that the owner has in addition to the raised deck amidships a very considerable clear deck space aft. Forward of the raised deck portion there is a deckhouse, the floor of which is below the main deck, forming a liberal dining saloon, with connection to galley by a dumb-waiter. The deck forward has been given a heavy crown forming a turtle-back, so that it will shed water readily when driven into a head-sea.

The owner's quarters are grouped together in the after part of the vessel. Immediately aft of the engine room is a stateroom, the full width of the boat, having a built-in berth on each side, with drawers under for stowage; a large bureau at the forward end, with plate-glass mirror, and at the after end of each berth a large hanging wardrobe. This room opens at the after end into a lobby, from which access is had to the upper deck

by means of a companionway on the starboard side. The lobby itself can be utilized as a stateroom, as it has a full-length extension transom that can be curtained off, still leaving the passage to the other staterooms.

On the starboard side, opposite the lobby is a liberal bathroom, with tiled floor, having a bathtub with hot and cold water, wash-basin and toilet. The extreme after portion of the vessel under the trunk cabin is laid out as another double stateroom, extending across the vessel, also having, as has the forward stateroom, a built-in berth on each side with drawers under, bureau with plate-glass mirror and two hanging wardrobes. It will thus be seen that seven people can be comfortably accommodated in this small craft, which is, to say the least, unusual.

The finish below will be Colonial, the drawers, bureaus, berth fronts and furniture being mahogany, while the partitions will be paneled in white, as will also the sides of the vessel and the space overhead between the deck beams. The furnishing below will be of the best, and selected with a view to providing comfort and hav-



Myrtle, 46 Ft. 6 In. O. A. Designed and Built by Atkin-Wheeler Co., for Mr. A. A. Gordon, Jr. Halesite, L. I.

ing a pleasing effect to the eye. The outside of the deck-house, as well as the inside, will be selected mahogany handsomely paneled, as will also be the trunk cabin aft. All skylights, handrails, deck seats, etc., will be of mahogany. The accommodations for the crew are all forward, where there are four pipe berths in a roomy fore-castle having its own toilet arrangements.

Aft of the fore-castle and under the dining saloon is a large space utilized for carrying water tanks, and also for stores.

The work of this vessel is well underway, and she will be delivered to her owner early in the Spring.

General dimensions are:

Length o. a.	65 feet 0 inches
Breadth	11 " 8 "
Draught	4 " 3 "

MYRTLE

MYRTLE was designed and built by the Atkin-Wheeler Company, of Halesite, L. I., for A. A. Gordon, Jr., for use as a day-boat, but to have sufficient accommodations for an occasional cruise. The boat is interesting in that the builders state that the craft will be entered in the next Bermuda Race.

The craft has 6 feet 2 inches headroom throughout and is finished outside in mahogany, with chestnut interior. The engine is a four-cylinder, 25-30-h.p. Scripps, which drives the boat at a speed of 13.5 miles per hour.

The general dimensions are as follows:

Length o. a.	46 feet 6 inches
Breadth	9 " 6 "
Draught	3 " 6 "
Freeboard, forward...	5 " 2 "
Freeboard, aft.....	3 " 3 "



Myrtle

AN AUSTRALIAN CRUISER AND THE CRUISING GROUNDS IN THE VICINITY OF SYDNEY

IT has been found here in Australia, as elsewhere, that a well-appointed auxiliary makes many trips hitherto impossible easy. Many of these power craft have been and are being built ranging from 20 to 100 feet in length.

The 41-foot boat, plans of which are shown herewith, was built by Woodleys, Ltd., for D. J. Foreman and D. J. Hood from designs by Walter Reeks, naval architect, and may be taken as typical of the Sydney (N. S. W. Australia) modern, small auxiliary.

The first consideration was to get a safe, roomy boat, easy to drive and that would comfortably sleep four aft and one forward. Secondly, to be worked with the least possible manual labor, and, thirdly, to provide and place the engine so that the absolute minimum of noise and vibration would be felt in the cabin and on deck. All the other thousand-and-one requirements of a small yacht followed as a matter of course.

The plans convey their own meaning. The engine, an 8-10 Jersey City Standard, having two cylinders, is placed just abaft the mast, and between it and the cabin is a heavy bulkhead with double doors, so that when running the clatter (they all clatter some) of the engine should be confined to the fore part of the yacht entirely, and when under sail or at moorings a free circulation of air, all fore and aft, can at once be obtained by throwing open the two 18-in. doors.

The engine is controlled by a hand wheel and handle in the cockpit. The exhaust system is a well-proved one, being through a copper water-jacketed pipe and water-jacketed muffler, thence overboard well above water, by which means the cabin is kept quite free of heat. The circulating water runs thus: From pump to far end of first length of exhaust pipe, by its jacket and short pipe to cylinders, through them and on to second length of exhaust by pipe, thence by jacket to muffler and by pipe overboard.

The back of one's hand may be held to any part of the jacket. It is expensive, but fine. Fuel (benzine or kerosene) is contained in a heavy copper tank under the cockpit seat; from it by slight air pressure it passes via a water catcher on the bulkhead to feed tank on the roof, and then by gravity to carbureter; the gauge glass and cock controlling supply from main tank are both inside the engine room skylight, and so easily regulated from it; thus the only inflammable oil below is that in the pipe and carbureter. Provision is made for about 50 gallons of oil, representing, say, 150 miles at sea, or nearly 200 miles on lake and river trips. The installation by Sanderman is a great success. Arethusa is electrically lit throughout. The rig is auxiliary, but ample for ordinary breeze; the jib and mizzen balance, and will often be set while engine is running, while the trysail and reefed jib should see her through in heavy weather. It may be noted that in order to keep the cockpit clear of sheets, cleats, etc., the main horse is placed as shown, and special provision of heavy posts and knees from

ship's bottom to house walls made to properly secure it. An unusually large roller, cathead and burton from the masthead are provided to make anchor-getting as easy as may be.

She is handsomely upholstered and fitted below with a view to creature comforts, and is in every way a thoroughly sound, useful auxiliary cruiser.

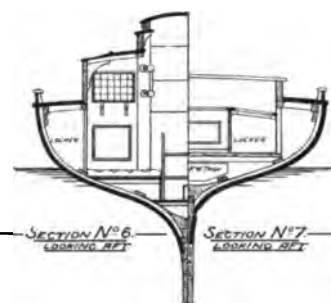
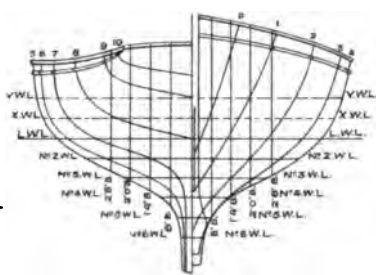
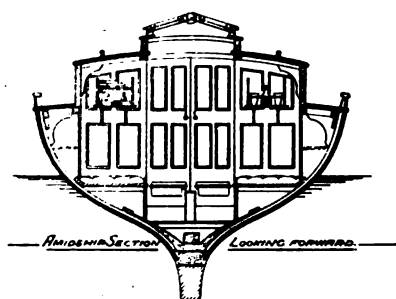
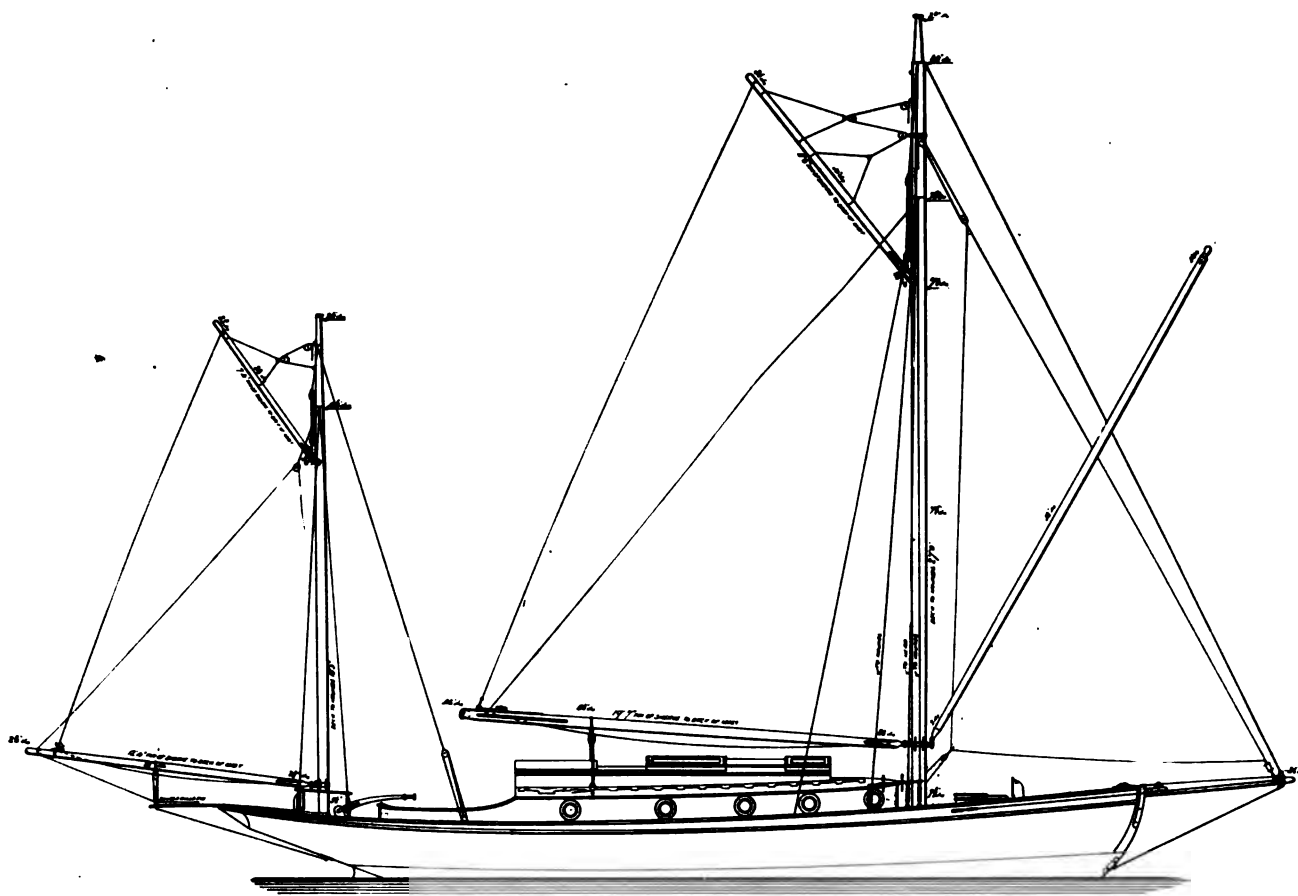
* * *

The cruising grounds for boats of this class are numerous along the Australian coast. Taking Sydney as home port, we have Botany Bay, 12 miles South, a large open but shallow bay, but with 20 miles of Georges River, winding and beautiful, Port Hacking, 5 miles further South, being the basin for the watershed of the National Park, where the fauna of the country is carefully preserved. Jervis Bay, 85 miles South, is full of fish, and Twofold Bay, 300 miles nearer the Antarctic, where a prosperous trade is carried on whaling.

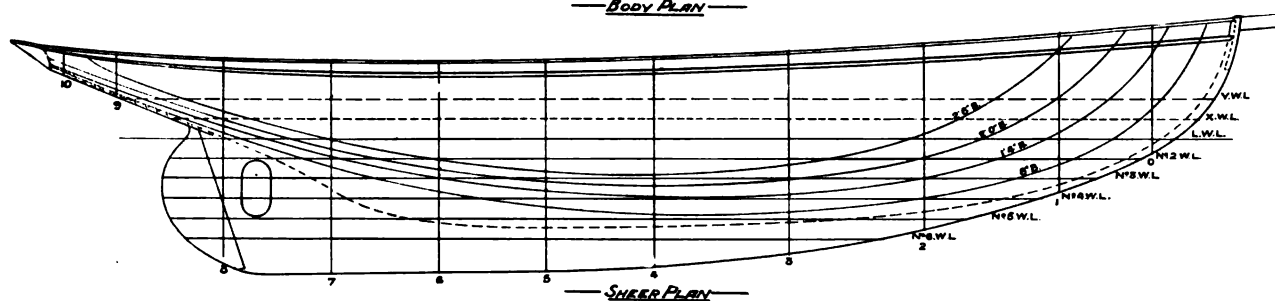
North from Sydney, 17 miles, is Broken Bay, with over 70 miles of the beautiful Hawkesbury River and its tributaries, high wooded hills and cleared land, growing corn and fruit, and terminating in miles of rich flats right up to the foothills of the Kurrojong Ranges, which grow oranges in profusion right to their very summits. An outside trip of 65 miles brings the great coal city of Newcastle, while 85 miles sees Port Stephens, one of the boldest entrances on the coast. Once inside, the small auxiliary just revels, 40 miles of smooth water in one direction, 70 in another, with branches of from two or three to 30 here and there, all through narrow winding well-treed river, small and large lakes and broadwaters, where at almost any time in open season duck, swans, snipe and other game is abundant, while about the entrance and a few miles outside fish are never-failing. North of Port Stephens are some six or seven navigable rivers of from a few to 80 miles, prosperous by virtue of the corn, cane and millet grown, and even more so through the dairying industry now having reached proportions requiring a coastwise steam service of over 40 steamers of from 200 to 1,400 tons, but necessarily of light draught in order to negotiate the bars which vary from 6 ft. to 14 ft.

Many of the towns on these rivers are well worth visiting. By easy stages, port to river and river to port 500 miles brings us to Moreton Bay, at the head of which a few miles up the river is Brisbane, the Capital city of Queensland, and in say 20 hours motoring the Southern end of the Great Barrier Reef is reached, between which and the mainland is an ideal cruising ground some 1,800 miles in length, with passages, islands, points, rivers, ports and boat harbors, too numerous to mention, while off Thursday Island the great pearl-fishing fleets, consisting of ketch-rigged boats of about 15 tons, literally in scores.

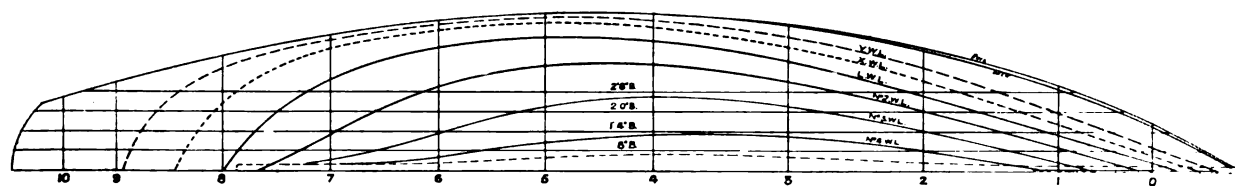
Arethusa has made many of the trips mentioned, and her owners are loud in their praise of her all-round ability and comfort.



BODY PLAN

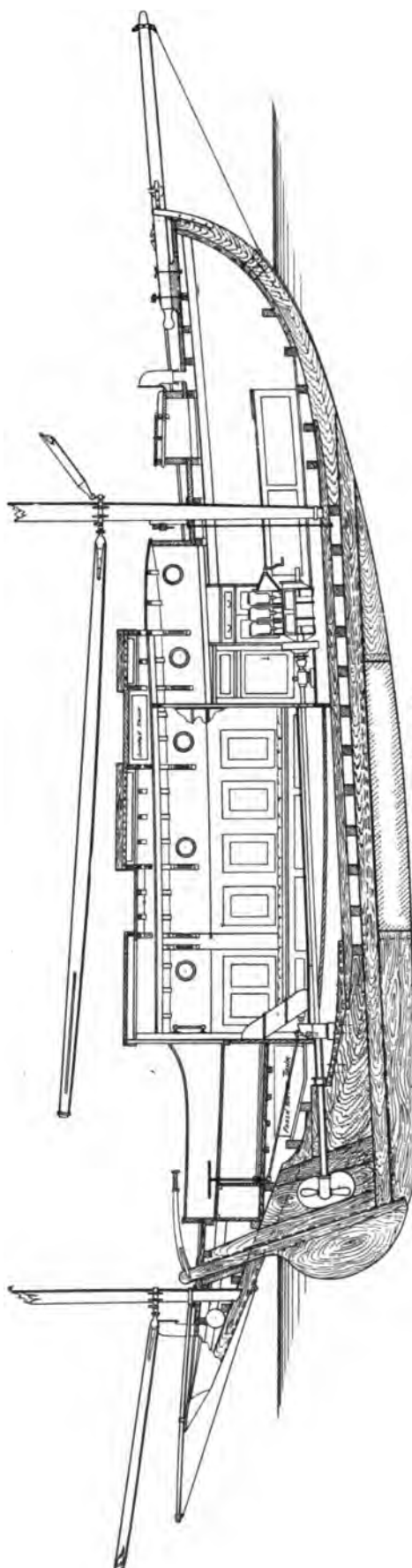


SHEER PLAN

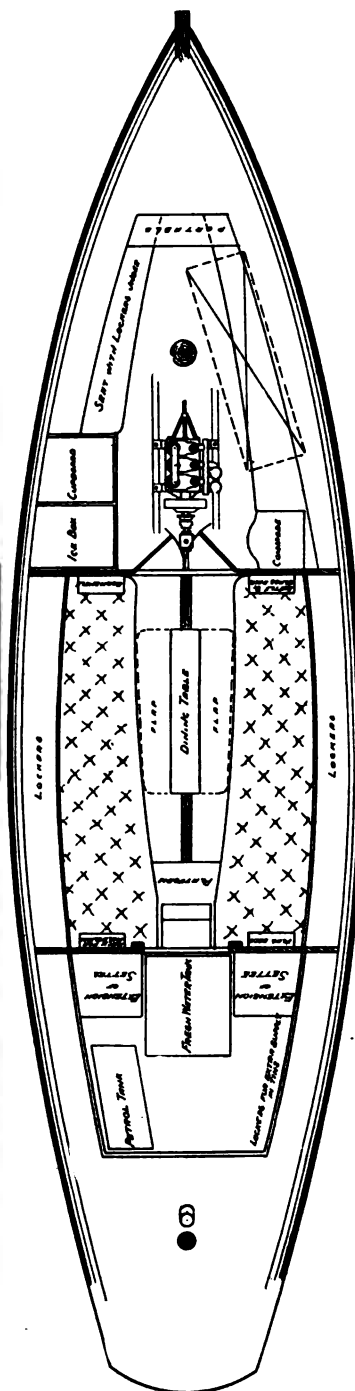


HALF BREADTH PLAN

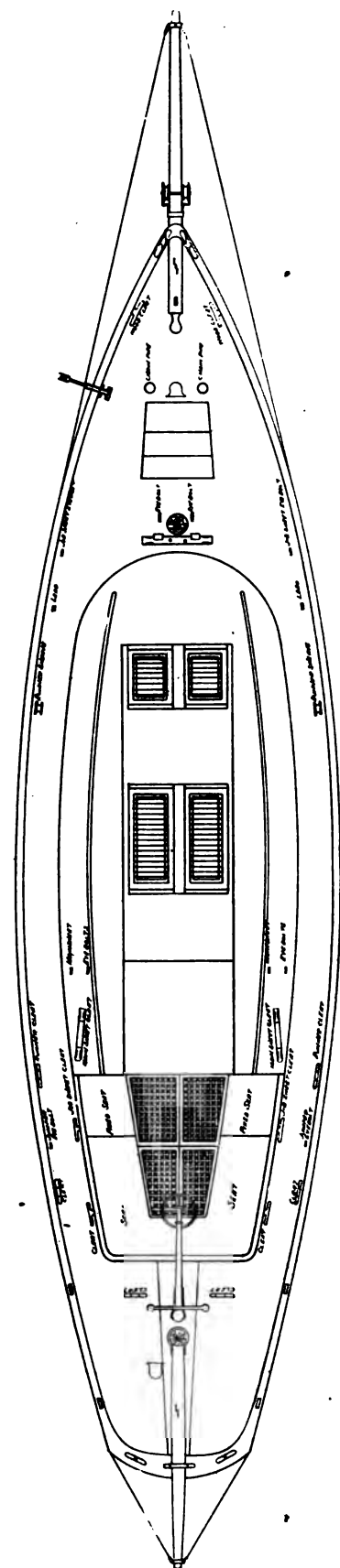
Sail Plan and Lines of Australian Auxiliary Yawl



— LONGITUDINAL SECTION —

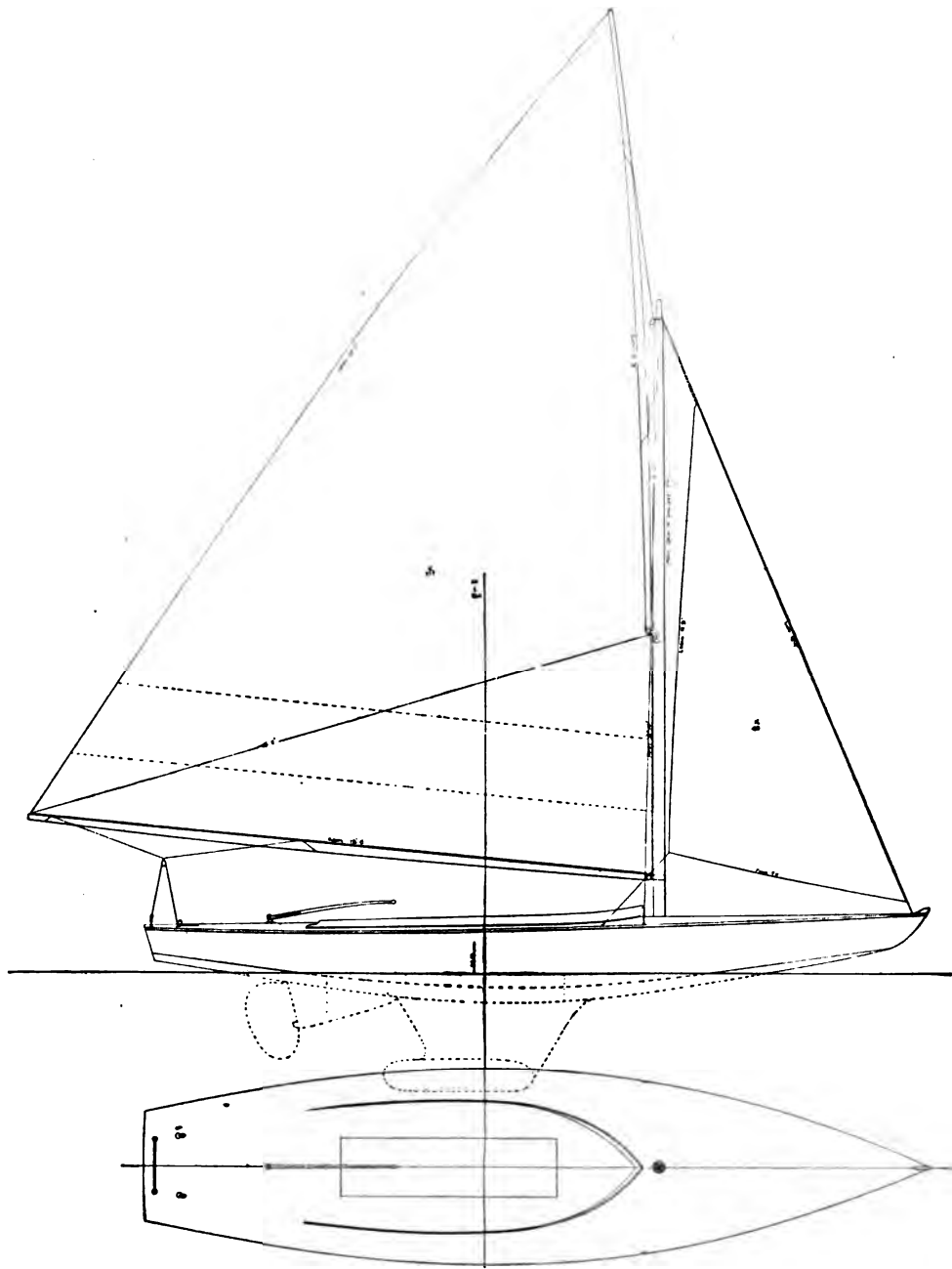


— CABIN ARRANGEMENT —



— DECK ARRANGEMENT —

Arrangement Plans of Australian Auxiliary Yawl



Sail and accommodation plans of the new one-design Bug Class, designed by William Gardner of New York City. These boats are to replace a similar class described by Mr. Thornton Smith elsewhere in this issue, and already over thirty of the class have been ordered. The feature of this class is the fact that the boats have been subscribed for by members of several different clubs on Long Island Sound, making possible one-design club racing as well as general inter-club racing.

ROUND THE CLUBHOUSE FIRE

LAST month the fuel was pretty punky and the result was more smoke than flame, but I had just come off a long spell at the pumps and was dog tired. To-night we will see if we can't get a clear, cheerful blaze to light up the corners and the faces of the happy crew snugly moored across the hearth. If you people would only do your own talking it would be much easier and pleasanter for me. I would choose to lay back in the chair, legs stretched out like a brace of spread cables, and both feet firmly anchored on the hearth, and thus riding head on to the warmth and glow, listen to your chin. The older I grow the more I dislike to write, and if things were shipshape I'd break the last pen and heave the fragments overside. But talk, ah! that's different! Nature gave us our tongues, but some busy, meddling rascal first plucked the feather from the wing and shaped it into a pen. Little did he think that he was shaping an instrument that age after age was destined to torture mankind.

* * *

One of my readers has written in asking why we call *Spray* a sloop when the pictures show the boat yawl-rigged. We call it a sloop because Captain Slocum always did, and because she was really a sloop, the after-sail being an after-thought put on by the Captain when his mainsail went bad. Captain Slocum never had a very high opinion of that jigger, and in his heart, I think, was a bit ashamed of it. I'm afraid we must give up all hope of ever seeing the old skipper again; it is now over two years since he departed on his last voyage. He told me that he was going up the Orinoco River, and through the Rio Negro into the Amazon and home that way, and that he expected to be away for about two years. But there is no news that he ever made the river or any port, and surely some of my correspondents would have seen *Spray* and sent word. I expect the old sloop spewed a plank; she was getting considerably dozy the last time I looked her over. Even in the early days of her rejuvenation she was not of the strongest, being built out of whatever came to hand and cost least. That she lived as long as she did and stood the straining and racking of those voyages is another argument in support of my assertion that small craft are more seaworthy than large.

* * *

Captain Slocum was what we may call an uncommon man. He was extremely intelligent, and in his love of roaming and adventure reminded me of the celebrated Moorish traveler, Ibn Batuta, who wandered from Cape Spartel to the Yellow Sea, making friends with white, black and yellow; always observing, making men and manners his study, and living by the gifts of those whose ears he tickled with his tales of travel and adventure. Slocum, like Batuta, was a friend-maker, and everywhere he went the best of the land welcomed him, bid him to the board, and gave attention, while in his inimitable way he spun yarns of his voyages. At Gibraltar he was the guest of the Admiral; at Montevideo the Royal Mail Company repaired his sloop without charge; in Australia and

New Zealand they gave him sails and stores; at Cape Town the Government passed him over its railway lines; and even old Kruger handed him a cup of coffee. From port to port he voyaged everywhere welcomed and entertained, and it was not until he reached this country and anchored in the port of New York that a welcome was refused and his efforts belittled and ridiculed. The American newspapers, when they deigned to notice his voyage, made fun of his boat and himself, and several more than intimate the story of his single-handed world-circling voyage was a lie. Captain Slocum felt this derision keenly, and frequently spoke of it. At this time *THE RUDDER* was a small struggling affair, but it at once recognized the worth of the Captain's story and came out in strong support of it, publishing a picture of *Spray* and a short account of the voyage. Captain Slocum never forgot this, and he always had a good word for *THE RUDDER* and its crew.

* * *

One day he came into the office with the story of his voyage and asked me if we could publish it. I saw at once that the story was worth more than we could afford to pay, and suggested that he take it to one of the large general magazines. He did, and *The Century* bought and published it. Afterwards he brought in the model of *Spray* and Mr. Mower took the lines off as they appear in his book. Slocum's story is a remarkable one; I do not mean as the story of a voyage but as a piece of writing. It is written in a pure narrative style, absolutely devoid of any disfigurements betraying effort, and flows from page to page like a wind-favored tide. It is worthy to be placed beside any narrative writing in our language, even beside the work of the great master of that style, De Foe. Posterity will give this book a place, and your great-grandchildren will be advised to read Slocum's *Voyage*, as a specimen of clean, pure narrative, just as to-day they read *Robinson Crusoe* or the *Voyage of the Beagle*. Peace to Captain Slocum wherever he may sleep, for he deserves at least one whispered tribute of prayer from every sailorman for what he did to rob the sea of its bad name; and for such a man, who loved every cranny of her dear old blue heart, who for years made her wind-swept stretches his home and highway, what is more fitting than an ocean burial?

* * *

Not in old bannered abbeys are her children laid to rest,
With the trophies of the chisel and the bronzes of the wall;
She takes them from their cradles to lie within her breast,
To rest unchanged forever in that vast and lightless hall.

The loftiest of temples, the stateliest of domes,
Where the master-minds of nations are laid with pomp and pride,
Are but low and spaceless fabrics beside the Fane of Foams,
Whose nave no man has put to rule, whose floors are oceans wide.

It mocks in its magnificence the sepulchre of kings;
The glory of the purple and the splendor of the bier,
And all the brass and marble are but mean and gaudy things
Beside the splendid trappings that the dead inherit here.

In an interesting story in this issue concerning British power boats the author speaks of the difficulty of getting yachtsmen of that land to take up long races, and gives as a reason that they cannot spare the time from business. That is not the reason. In the United States we have practically no leisure class; not one per cent. of our yachtsmen are people out of business, whereas in Great Britain a large percentage of the men engaged in sport are idlers who have nothing to do but follow the different sports. The trouble is there is no leader. I'll guarantee that if I was in Great Britain for six months, there would be racing on all sides of the island and down through the middle. The curse of British yachting is that it is in the hands of professionals who make a living out of it, and these individuals cold-water all that does not bring grist to their mill. Yachting in America is purely an amateur sport, about the only one that is, and is consequently clean and fair. Our other forms of athletics are best spoken of with the nose tightly grasped between finger and thumb. We are not a shining example as a sporting nation, but are steadily improving in this respect, and some day will be able to give a foreigner fair play even if it does adversely affect the gate receipts.

* * *

The same author also speaks of the comparative seaworthiness of American and British power boats. So far as seaworthiness is concerned, our present cruising power boat is as near perfection as it is possible to make any human device. In this, in looks, in fact in everything they are five years ahead of anything of British conception. The only decent-looking cruising boats they possess have been copied from our plans or built after them. You have only to look at the pictures of the present British power craft, to see that they are just at the stage we were in five years ago, when I first began to hector the builders and designers into producing seaworthy and good-looking craft. Our present boat is the result of the crusade made in this magazine, and every improvement is the result of our efforts. The British-designed boats look like open launches with cabins added, and are decidedly neither pretty nor seaworthy. Now this is something I know all about, for if I cannot claim anything else as the result of my work I can claim to have developed the present cruising power craft.

* * *

Nations are not developed at the desk of the counting room or beside the hearth of the homestead. It is out in the broad, clean reaches of meadows, seas and forests that they find their stimulus to greatness, and the pluck and pride that sends them swinging to the forefront. Soldiers are not made in camps and courts. It is the long march and the pitched field that hammers into shape great commanders and wroughts the cool, skilful unit of the rank and file. So it is with human devices; it is the test under greatest strain that develops and perfects, and this is more true of the vessel than any other human fabrication. Had we been content to have potted around in our harbors, rivers, and ponds, the present splendid power boat would never have been developed. It was when we faced the sea, covered long distance, and lived for days aboard under a constant strain that we realized what was wanting and comprehended the necessity of the changes.

* * *

Things in the sail yacht racing line are about to have a tremendous boom, and this time at top and bottom. Schooner racing, which had about got to the pitch of

living off boot-legs, is having a strong revival all along the Eastern Coast of the United States. Several craft are building and a number of old ones will be fixed up and raced. Small sail craft are building by scores, the world over, and several new one-design classes are projected. The Inter-Bay Catboat Race to be held in Boston waters will bring out several new craft, and be hotly contested by entries from at least two other localities. The Bermuda sailboat race will start from Boston the first part of June, under the flag of the Boston Y. C., and it is expected at least five or six schooners will enter the fight. I want every man who can, to jump in and give this race a hand, for if we are going to bring back schooner racing and hold it, we must keep the irons hot. We want to have a smaller class, yawls and sloops, start at the same time, and if you are willing to enter let the club know and they will make an opening for you.

* * *

The Touring Club Italiano have asked me to announce to yachtsmen that it will hold a long-distance race next June, open to all the world, from Venice to Rome. The course lies down the Adriatic through the Straits of Messina, up the Tyrrhenian Sea, and to a finish off the celebrated castle of San Angelo on old father Tiber. The race will be divided into eleven stages of about 125 miles each, the boats stopping for the night at the different ports on both sides of the peninsula. This will give the stranger a splendid chance to see the shores of Italy, over a course that fairly gluts with historical interest, and has to offer miles and miles of beautiful scenery. At Rome a series of races will be held, handsome prizes being offered for all classes. I have long been trying to get yachting going in Southern Europe and this is the first active response to my work, so I am anxious that our country should be represented in this first long-distance race. If you are interested, write, and I will give you full particulars.

* * *

A special committee has been appointed by the Motor Boat Club to handle the Bermuda Race for the Bennett Cup, and will go to work at once to get entries. This race is one every owner of a cruising power boat should enter at least once in his life. It is an experience that will be invaluable, besides being a pleasant excursion. The fear of danger has been eliminated, and the trip to the island is now known to be not more hazardous than any ordinary cruising run. I think the start should be made later in the year and not early in June, say about the end of that month. There is also being planned a long race or racing cruise on the Great Lakes, and a race of the same kind on the Pacific Coast. Long races will take place on the Baltic and between Scotland and Ireland. Good luck to them all and may the sport flourish in all quarters of the globe.

* * *

Sometimes I get disgusted and have half a mind to up-helm and let the old packet go on the beach. This continual beating to windward with nothing in sight ahead, a scant locker, and a constant fight to keep the crew at their stations, is disheartening. Then as welcome and joyous as the first ripple of a fair wind comes a letter like this:

As a subscriber to THE RUDDER in New Zealand I am writing these few lines to wish you the jolliest of Christmases and the happiest of New Years! As we say in New Zealand, "Kia bia!" to you—which means Good Luck! to you. Christmas with us is indeed a time for rejoicing, for many of our happiest hours are then spent "On the glad waters of the dark blue sea, our thoughts

as boundless and our souls as free!" to quote Byron. Most yachtsmen in New Zealand manage to sneak off a few days if not longer from work at Christmas, and as it is midsummer you can imagine with what delight we throw off the chains of toil for a week or two. As you are no doubt aware the finest cruising ground in New Zealand is the Hauraki Gulf, in which Auckland is situated, but there are other places of attraction to yachtsmen. In the South at Wellington we have the Sounds to cruise in. They are reached by a run of from fifteen to twenty miles across Cook Straits and provide excellent sport in many ways, resembling somewhat the Norwegian fiords. I hope to contribute an article to your columns about them some day, when I will send you some photos. I think all New Zealand yachtsmen greatly appreciate *THE RUDDER*, especially the chats Round the Clubhouse Fire. Most of us also remembering the encouragement you have given to ocean racing here, look upon you as a personal friend. I am sending you a copy of the Auckland *Weekly News* (Christmas Number) under separate cover, from which you will gather more about us than I could tell you. Again wishing you the compliments of the season and a Happy New Year and the same to *THE RUDDER*.

* * *

A few days after that cheerup came another letter, this time from Victoria, Australia, and I tell you it put new life into the Oldman. Right in its wake Commodore Dickson of the Geelong Club ran up and hailed me, and told me how much the boys thought of *THE RUDDER* and its Skipper until I had to get the spanker boom between us to hide my blushes. This is the letter:

GEELONG YACHT CLUB

Established 1859.

Club House,
Eastern Beach.

Hon. Secretary's Office.

Dear Sir: I have pleasure in advising you that at the annual meeting of members of the Geelong Yacht Club, held at the clubhouse, Eastern Beach, Geelong, on Wednesday, 5th instant, you were unanimously elected a Honorary Life Member of this club, for distinguished services rendered to yachting, and as a slight token of the members' appreciation of your kindly interest in our club. I have the honor to be, dear sir,

Yours obediently,

H. J. SMITH,

Honorary Secretary.

* * *

Another gift of the same nature also came to me through Mr. Fred L. Meyers. Mr. Meyers in person brought me a membership from the Royal Jamaica Y. C. This is the first from the West Indies, and I greatly value and appreciate the honor, coming from an old and distinguished organization. I now, am proud to boast of forty-four honorary memberships and hope it will be fifty before my next birthday, which comes in March.

* * *

There are things a man regrets to speak of, and this I am about to mention is one of them. We like to believe that all those with whom we are in contact either in a business or social way are honorable and honest, and there is nothing so distressing as to realize that this is not

always true. Last Spring an old reader and warm friend of this publication sent me the plans of a boat called Viper II. These plans were published and covered by copyright and became the property of the company. The boat excited a world-wide interest and a large number were built. In order to facilitate this building we loaned the plans to one of our advertisers and gave him permission to use same for building purposes. Without warrant from us and in violation of all ethics of business, this man handed the plans of this boat to another publication, and that publication published them, without credit either to Mr. Hickman or *THE RUDDER*. I want to add that this is the first time that such a thing has been done. Whatever rivalry there has been between publications in this line, heretofore we have always respected each other's property, and I hope will continue to do so. Stealing plans is a mean, petty crime, and I trust this will be the last time it will be committed.

* * *

We stopped sending out Spray pictures until the December rush was over, as they smash up everything in the mails at that time, and we wanted you to get the picture in perfect condition. I would also call your attention to the necessity of sending in at once your illustrated advertisements for March. I intend to start the ads earlier than ever this year, so send in your copy and photo the day you read this.

* * *

The Oldman has asked my permission to put his picture in the magazine. I have in the past refused this, but there has been such a demand for his face and it costs so much to send out photos that I have reluctantly given in, and it will appear in the next number. The conception we form of people is often more pleasing than the real presentation, and frequently the person of imagination is preferable to the real article both in looks and manners. Years ago I had a very high regard for a President of the United States, conceived him to be a broad-minded, honest man. One day I met him face to face. A glance was enough; I saw a cunning, clever politician, a man just like all his trade, self-seeking and insincere. In my boyhood I loved the songs of the poet Herrick, a man who wrote some of the sweetest and some of the worst lyrics in our language. Impressed with his poetry I pictured the poet as a gentle, timid, kindly individual, with a face like a rose, and a voice soft as the first trill of the nightingale. What was my disgust and horror when in a book I found his picture:—a coarse, greasy-looking brute, with long curls, and a face like an overfed publican. From that time "Gather ye Roses," and the "Lines to Diomedes" lost their charm. That is one reason why I have always refused to allow the Oldman's picture to be printed.

Congress

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VOL. XXV N°2



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The Oldman

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The

Editorial

A. K. A.

SAILING

Har-

D

At the time of the sailing of the ship, the weather was very fine and the sea was calm. The ship sailed at a steady pace and the crew was very efficient. The passengers were very comfortable and the food was excellent. The ship arrived at its destination on time and the crew was very helpful.

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Crane

The Rudder

Edited by THOMAS FLEMING DAY

Vol. XXV

FEBRUARY, 1911

No. 2

SAILING ON TROPICAL SEAS

Harry H. Dunn



EVER since the days when man discovered a sail he has been seeing waters over which to fly it; ever since that sail was turned from war and commerce to pleasure he has been seeking enchanted isles or golden shores, where wanton winds linger lovingly, caressingly, to drive him from port to port.

That ancient Spanish adventurer, whoever he may have been, who, thankful that the tem-

pest was passed, erected the stone sails of Guadalupe to the patron saint of Mexico, set on the land of this growing republic a landmark for mariners, who, cast inland, may see here the penance of him who was storm-tossed on the great sea.

For centuries the stone sails of Guadalupe have been known of natives and of guide books alike in Mexico, but now there has come to her bays and her lagoons, her warm, sun-kissed coasts and her beautiful inland lakes, yacht after yacht, more permanent monument to the men who go down to the sea in ships than are the adamant canvases of the lonely hill.

Indeed, yachting and yachtsmen have come to Mexico to stay—that is, some of them have. All who have been driven here by favoring winds have found it an elysium, a land whose waters are ever swept by the soft sweet breath of the South, a land whose stars are as beautiful as the eyes of her women, whose sunsets are more crimson than their wine-red mouths.

For those who have not come, who have not drifted

over the shallows of her two seas or skimmed over the deeps of her outer waters, this story is written. He who pounds this typewriter that he may peddle this story to this editor, and thereby eat for a few days, has traveled through almost every state in Mexico, has gazed out over her blue seas from every port of any importance, and has sailed a white-wing or driven a power boat out of most of her harbors, and on several of her lakes and rivers.

He has hunted and fished in her hot country, motored on her plateau, and now has an opportunity to ride in the first aeroplane ever brought to Mexico, to rise to the clouds from a plain which is already more than seven thousand feet above the level of the sea. But in all these pastimes, he has found none to equal afternoons spent in the Gulf of Lower California, just outside the port of Guaymas, or in the curve of the sheltering shore near Manzanillo, or around the Gulf of Mexico harbors of Vera Cruz and Tampico—all under the spreading canvas of a sailboat.

I cannot, in good conscience, call them yachts, for they were native boats, merely huge canoes, but they had sails, and they would make pretty good time before the wind, if I did not hold her too much to the breeze and thus heel her over until the boatman in the stern turned from brown to ash and then to white in fear.

Also, this same writer has stood out from Progreso, down in mystery-haunted, Maya-filled Yucatan, under a favoring wind, until the shore-line of the great peninsula became a blur, and everywhere was a wide waste of blue sea. Streamers of smoke still further out betokened the laboring liners, buffeting the rollers on their way to the far ports of Argentina and Brazil, and when he has had his fill of Mexico he is going to the waterways of these great republics of the real South, the rising suns of the New World's richest continent.

But the sea is also powerful, revengeful, awful, in the

tropics, as well as smiling, though one does not expect a scowl to wreath the old Neptune's face here as he does in the Northern seas, and, consequently, is less often prepared for it. The winged canoes that travel even along the sheltered coasts are frequently lost; while larger schooners disappear as if by magic in some of the storms which sweep the open gulf.

Few people realize—even those who are vitally interested in the ways of the water world—that Mexico has a coast-line, combining the East and the West, of between four and five thousand miles, not including the double coast of Lower California. The republic extends through nine degrees of longitude, from the head of the Gulf of California to the Usumacinta River, which divides this nation from Guatemala. From Matamoras on the Gulf of Mexico to the Northwestern corner of the peninsula of Lower California is nearly eleven degrees of latitude. In these confines, in this broad extent of mountain and plain, rolling slope and level valley, river

the many indentations of the shore-line, all of which add to the pleasure of the yachtsman-explorer.

I first saw Mexico from the Northwest; therefore I shall deal first, in this series of experiences, with the ports of the West Coast, and some of the pleasures of cruising in the long, slender gulf, which runs up to meet the great Rio Colorado.

In these articles it must not be supposed that I traveled in one boat, that I cruised from point to point in the same yacht, for much of my traveling has been done by rail, some of it in stage, and not a little on muleback, for by these means alone was I able to see both the coast and the interior, for all the states of Mexico are so interdependent, coast and mountain hamlet, that when one sees a part he is filled with a desire to see all.

I. IN THE GULF OF LOWER CALIFORNIA

There is no stretch of water in the world more peaceful-looking, and yet more treacherous, than that arm of



The Famous Stone Sails of Guadalupe. Erected by Sailors Saved from Death at Sea, to the Patron Saint of Mexico

bank and ocean shore, the traveler can find all the varying kinds of climate and scenery the most fastidious soul may desire.

This is not less true of the sea, and one can spend the heated months in the comparatively cool waters of the Pacific along the Lower California coast, and then wander down into the *tierra caliente* to pass the days and nights of the cooler term. That all Mexico is tropical is a mistake, as you will speedily find if you go yachting or hunting or fishing on any of the lakes on the lofty plateau which forms the backbone of the republic.

Down the West Coast of Mexico, from the head of the Gulf of California to the Guatemala border is between 1,900 and 2,000 miles, while from Matamoras to the border of Quintana Roo and British Honduras, around the rim of the Gulf of Mexico, is more than 1,500 miles. Neither of these measurements takes into account

the sea which divide Lower California from the mainland of Mexico. Shored by sparsely-inhabited territory, little known of white men, seen only now and then by the wandering red-skinned tribes which inhabit the Sonoran desert and the equally arid lands of the peninsula, at first this gulf seems uninteresting. Cruised as I have cruised it, however, in a power boat and in a sailing sloop, it has made to me some of the most remarkable revelations of all America's Egypt.

To see the Gulf of California I went to Guaymas, to which a railroad, the Southern Pacific in Mexico, leads from the border at Nogales, Arizona. Because this is the only port on the Gulf of California which amounts to anything, and because it is most convenient for American yachtsmen who are going into Mexican waters, I went there.

Leaving Guaymas one sunny morning in September,



Part of the Harbor of Guaymas and the Customs House. All the Landing Here is Done by Lighters

using one of the big, apparently ungainly fishing boats, about forty-five feet long and with two masts, carrying what would be considered a ridiculously small sail on the Atlantic coast, we passed out of the broad, deep channel and into the open Gulf.

First, before we could start, it was necessary to unload a miscellaneous cargo of vegetables, watermelons, fruit and fish, brought from points down south along the mainland coast, into Guaymas. The boatman, whom we nicknamed "Cayman," meaning "alligator," had allowed for a week or so to lighten his schooner of her load, but we concluded to pay the difference and get men enough to empty her in a day. One of the photos shows a part of this gang passing melons out of the boat to a waiting carreta or freight cart, one of the melons being in the air at the time.

Guaymas is a city of nine thousand people, with a fine harbor if it were developed, and, in its present condition, a safe port for all manner and any number of sailing vessels. One can scarcely realize the change

from harbor to gulf, so deep is the channel, and so quiet the water in the sea outside. It is rather a long trip from this port to Montague Island, up in the head of the Gulf of California, along the eastern shore of the gulf, and back past Angel de la Guarda Island and the pearl fisheries of La Paz, on the West side of the arm of the sea.

We made it, however, taking weeks in the journey, seeing the mysterious, much-lied-about Tiburon Island, which I later visited in a power boat. The gulf is some eighty miles wide at Guaymas, narrows to fifty at the Tiburones Islands and then widens out again to seventy-five miles between Point San Fermin on the Lower California coast and Alamo Muerto on the mainland.

The Mexican coast is low, sandy, barren, a desert in appearance and in fact. On the peninsula side of the gulf the mountains come down almost to the sea, great lava-strewn crags, cutting the coast-line into so many small headlands, points and reefs that no chart-maker ever set down half of them. The gulf is so quiet, however, that one can loiter along these coasts, see every



The Sinaloa Coast near Mazatlan, Showing Three of the Coastal Islands, Each Barely Separated from the Other by a Narrow Channel



Unloading the Schooner at Guaymas, Preparatory to Author's Trip Along the Mexican Coast

barrier, every reef, every point miles away, and can then anchor for the night in safe waters.

Almost anywhere one can make a landing, and these small trips inland are the most interesting parts of the trip. On the Sonoran coast, for instance, there is the ruin of an old temple, concerning which the Indians know nothing, and which is evidently of Chinese or Japanese origin, bits of real oriental jade having been dug up in its vicinity. Many small Indian villages dot both shores of the gulf, and in some of these a white man has never appeared, especially in those a little distance back from the coast. In all are still preserved the unique ceremonies and customs of the people, and not even the shores of the Mediterranean can show such interesting scenes as can these banks of the slender waterway.

He who goes to sail on this gulf, however, must take his supplies with him from Guaymas, for he will have no further chance to purchase anything but tortillas (thin cornmeal cakes) and beans. Added to this, there is the pleasure of the fine shooting which the coastal mountains afford in the way of deer and wild pigeons, while every estuary and swamp, no matter how small, is filled with ducks and shorebirds from September on to April. These are the months when sailing on the gulf is most delightful. Earlier in the year it is unbearably hot in Guaymas, or at other points along the coast.

If possible, bring your own sailors; if you have a power boat, it is imperative that you bring your own machinist, for, beyond sailing his lateen winged *canoas*, the Mexican waterfront man knows less about a boat than does a Swiss mountaineer.

The first real objective point after leaving Guaymas is Tiburon (shark) Island, some 110-115 miles up the gulf. This is the dreaded island inhabited by the Seri Indians, said to be cannibals, and otherwise glorified by adventurers of many nations who claimed to have visited Tiburon. The island is some thirty miles long by half as wide, contains about 500 of the naked Seris, and can be visited with impunity by getting the ear of the chief, who speaks a little Spanish, and is not nearly so savage as the tribesmen he rules. It is decidedly unsafe to go on the island alone, or even in a small party, without this chief's permission, for the natives are armed with poisoned arrows, made deadly by a coating of rotten deer's liver and rattlesnake poison, which is almost always fatal in its effects.

Once on the island, however, the people and their two villages are most interesting. The writer, who has twice visited Tiburon, believes that they are the closest to primitive man of any nation in the world, with the possible exception of the Tierra del Fuegians, at the extreme southern tip of South America.

These Seri Indians know absolutely nothing of any-



The Port of Guaymas from the Harbor



Water Supply of Guaymas, a City of 9,000 People

thing representing money, have no idea of any sort of trade except the direct barter of one thing for another. More than this, they still carry fire, not even having learned to strike a spark from two stones, though there is flint on the island. There are only two springs on Tiburon, and at one of these the Indians have a sort of religious meeting place, where there are several strange, though rude, idols. You will find nothing here to compare with the wonderful sculptures of the Aztecs and Toltecs further south in Mexico, but the very primality of the people and the crudeness of their handiwork makes them interesting.

There is no harbor to speak of on Tiburon, but on the southeastern corner there is a large bight, where a yacht may be anchored and a landing made on the island. The channel between Tiburon and the mainland is narrow and very shallow, so much so that at times of extremely low tide the Seris claim to have waded it in safety. On this account it is best to go out into the open gulf, if one has a boat of any size. Running aground in the gulf is a matter of a long, slow wait for the turning of the tide—there are no tugs to pull one off.

Beyond Tiburon the yachtsman coasts the shore of the mainland, passing innumerable river mouths, now choked with sand, and their waters never reaching the sea. This Sonoran desert is said to be rich in minerals, but is a land of death for many who invade it, and it has never been opened up save at the Las Pintas mines,



Rapid Transit

near Bay St. Georges, well up toward the mouth of the Colorado. Above Bay St. Georges is an island of the same name, on which is said to be an extremely interesting ruin. I did not have time to visit this, but am going there in that mysterious "some day," for which some of us plan and a few finally reach.

In the mouth of the Colorado, or, rather, where all its mouths converge to dump their muddy tide into the gulf, is the Isle Montague, a place seldom visited by white people, and in practically its primitive condition of nature. It pays, if one is making a leisurely cruise, to land at many points along this coast and visit the villages a short distance inland or on the very coast. Rolling along over the waves is pleasant, but it rests one's sea legs and gives him an idea of a little-known part of Mexico to fall overboard now and then and stroll about on shore for a time. There are many tribes in this region, each one different from the others, and as the people are



Church Copia del Carmen, Hermosillo

different, tribe from tribe, so are the villages or tribal settlements different each from each.

Returning from the mouth of the Colorado, where one can have the finest duck-shooting in the world, if he so desire, live outdoors without even an excuse for a tent all the year round, and get up the great river of the Southwest a considerable distance in a small boat—returning from all these pleasures of the outdoors—the yachtsman begins to see point after point shoving its nose out into the sea, and bay after bay beckoning him to linger and land a while.

Like Ulysses and the Sirens, he must lash himself to the mast or the temptation to put ashore in the dory and explore the peaks and the valleys will overcome him, and the trip never will see its end. Incidentally, small islands, some of them volcanic, others the product of erosion from the mainland, begin to dot the coast, and there are as many foam-lipped channels as the Thousand Isles can boast.

I have crossed the bar of the Columbia when it was roaring like a millrace, every roller crowned with foam; I have passed through the Golden Gate when the sea was whimpering like a hungry hound, but I have never seen such rough water as some through which I have passed in a power boat on the Gulf of California. I cannot handle a yacht as I can an engine, and I never attempted to shoot any of these mighty torrents in a sailboat, but I have had some sport not unmixed with danger at the wheel of a 35-foot power boat, in this peaceful-looking gulf.

The largest of these islands is Angel de la Guarda, longer than Tiburon, but not quite so wide. It lies, hugging the peninsula shore, about 175 miles South of the mouth of the Rio Colorado, and is supposed to be uninhabited, though at the time I passed there was a fire on the island, possibly kindled by Indians from Lower California, the channel being narrow and passable in canoes.

Another like distance below Angel de la Guarda is Bahia Concession, which, on the maps, looks like a good harbor, with a wide bar, but it is best to explore the entrance in a smaller boat before trying to go through with the yacht or large power boat. Along the outer harbor here is the town of Mulege, an interesting village, which is worth while visiting.

Two hundred miles, or thereabouts, still further South, are the bay and town of La Paz, the latter being the capital of the Southern District of Lower California. Here are the greatest pearl fisheries in the New World. Even the rivers of South America do not produce so many or so large pearls as does this port, which is famed all over Mexico as the source of some of the most famous jewels of the old Spanish families resident here.

At La Paz also are taken hundreds of sea turtles, which yield the famous tortoise shell of commerce. An entire shell can be bought at La Paz for five pesos, \$2.50 in the money of the United States, while I have seen several really beautiful pearls which were bought from native divers for trifling prices. There are thieves among the pearl dealers here as well as in the South Seas also, and there are ways of "salting" a pearl to make it appear many excellent things which it is not, all for the benefit

of the "tourista" who, by chance, visits this out-of-the-way spot.

Much, if not all, of this pearl fishing is carried on by naked Indians, who have no more knowledge of a diver's suit than has a Pah-Ute of the California desert. It is one of the interesting sights of the trip to see these brown-skinned fellows dropping into the clear sea, or raking the shells of the bivalves from the shallow beds to search them for the pallid gems. Now and then a rose pearl is found. I saw one in Mazatlan, which had been sold in La Paz for forty-five pesos, \$22.50 American money, and afterwards brought \$750 in New York. There is chance on chance to pick these up at La Paz, so long as the inspectors for the company do not "get wise" to the Indian who is doing the selling.

La Paz itself is a pretty little town, looking especially so from the sea, but is unbearably hot during the Summer months. It has other industries than pearl fishing, among them a large tannery, which handles practically all the hides from Lower California's thousands of cattle. Just outside the harbor are several islands, interesting as being the home of myriads of sea fowl, and some of them surrounded with especially fascinating legends and romances of the early days of the Spanish occupation. Here, too, the yacht can be outfitted for the return journey diagonally across the gulf, or one can turn South and East and fetch up at Mazatlan, the most important port of Mexico's West Coast.

The distance from La Paz to Mazatlan, roughly estimated, is 250 miles across the lower part of the Gulf of California. I went down from Guaymas by rail, but one can cross from the lower end of Lower California to the little Sinaloan port of Altata on the mainland, and thence skirt the shore back to Guaymas in the yacht, or, leaving the boat there, go ashore, take the Western Railway of Mexico to Culiacan, the capital of Sinaloa, and thence get the Southern Pacific in Mexico train either to the South or to the North.

The cruise outside the peninsula of Lower California properly should be made from San Diego, or some California port, and so does not come within the scope of these articles. It is, however, an interesting trip, and might be made prefatory to cruising in Mexican waters.

(To be Continued.)



IN THE TRACK OF THE TRADES

Lewis R. Freeman

PART III



THE port doctor piloted Lurline to an anchorage on her arrival at Pago Pago, and through a faulty diagnosis of the lay of the bottom, combined with a faulty prescription when his original mistake was discovered, missed only by the narrowest of margins leaving his patient a subject for the marine hospital. A few of the details may be worth recording in their bearing on the moot question of the advisability of placing surgeons in command of the government hospital ships.

The doctor met the yacht as she came gliding up the bay before the gentle evening breeze, and after satisfying himself that she bore no evidence of plague or yellow fever in cabin or forecastle, kindly volunteered, in the absence of a harbor master, which functionary the port did not boast, to show us the way to the safest and most convenient anchorage available for a visiting craft. We accepted his well-meant services without misgivings, and the quarantine boat, its gaily-turbaned fita-fitas leaning lazily on their oars, was soon trailing astern, while the doctor, clearing his throat, began "piloting."

"Straight down the middle," was his first order; and "Straight down middl', Sir," muttered Perkins at the wheel, holding the yacht to her even course up the bay, in apparently correct interpretation of the direction as meaning something akin to the regulation "Steady as she goes."

"Now in past the Wheeling," was the next command; and when we had swept smartly in past the Wheeling, "Now edge in a bit toward the shore," carried the yacht under the shadow of the towering Southwestern harbor walls.

At this juncture the doctor went forward to reconnoiter, and while we still slipped at no mean speed through the water—quite without apprehension because of the considerable distance still intervening between the yacht and the apparently steep-to bank—the excited order came booming back to "Keep her off! Keep her off!" Here was a properly phrased nautical order at last, and Perkins grinned appreciatively as he spun the wheel up, mechanically muttering "Keep 'er off, Sir." An instant later the Commodore, dashing wildly aft, cleared the cockpit rail at a bound, and, knocking the surprised

Perkins backward with his shoulder, began climbing up the spokes of the wheel like a monkey as he threw it hard down. The yacht wavered a moment, as though in surprise, and then, with a slatting of canvas and banging of blocks, came up into the wind and paid off on the other tack just in time to avoid the thrust of a jutting point of coral. We felt fully justified in setting aside our volunteer pilot and finding our anchorage after that.

Regarding which it might be in order to explain that the shores of Pago Pago Bay, though the volcanic walls themselves shelf off abruptly to a great depth, are fringed with a 100-yard wide table of coral which rises to within three or four feet of the surface throughout its length. The outer edge of the latter drops off sheer to deep water and anywhere beyond is good anchorage. The doctor, of course, knew of this coral bank but had miscalculated its position. When its jagged brown rim caught his eye through the green water, realizing that if the yacht drove on it she might do herself harm, he



Picnic Luncheon Given for Lurline's Party in Maletoa, Samoa

very naturally shouted to "Keep her off!" which order the man at the wheel, quite as naturally, interpreted to mean "Keep her off the wind." This he did, with the result that he was heading her more directly than ever onto the reef, when the Commodore, catching the lay of things, threw her up into the wind, avoiding by a scant dozen feet the jagged edge of the coral bank.

In the settlement of the Samoan imbroglio of the late nineties by the partition of the group between Germany and the United States, England being allowed territory in Tonga and the Solomons, America, for all practical purposes at least, had much the best of the bargain. Germany entered into actual possession of the two largest islands of the group, Upolou and Savaii, leaving the United States to do the same with Tutuila and the Manus. Our Government, however, contented itself with a naval station at Pago Pago, Tutuila, and the exercise of a mild protectorate over the natives of the rest of the island. Germany's rich and beautiful islands have turned out nothing but costly colonial experiments, while the establishment of a naval station at Pago Pago has placed the United States, strategically, in the strongest position in Polynesia.

Pago Pago is undoubtedly the finest island harbor in the Pacific, either North or South of the equator. In form it is not unlike a fat letter "L," of which the shorter line is the entrance and the longer, inclining slightly inward, the bay proper. Ages ago the bay was undoubtedly a huge crater occupying the center of the island. One day the water must have broken through into the lava, causing an explosion which, in addition to

settling the island a thousand feet or so, blew out a big slice of the crater's rim and dropped it out of sight somewhere in the deep sea. The place where the slice blew out is the present entrance to the harbor, and it is wide and deep enough to hold the capitol at Washington without interfering with the navigation.

So completely landlocked is the harbor, and so smooth are its waters in all weathers, that from anywhere in the inner bay—except for the tropical vegetation which clothes the mountains—it might pass for a Swiss lake. The high mountain walls cut off the rays of the morning and evening sun, and the velvety green of the wonderful tropic tapestry which covers them, reflecting scarcely any light and heat, makes the harbor several degrees cooler than any other place of similar latitude, North or South of the equator. At noon on the warmest day of a month spent here the thermometer registered 79° Fahrenheit. The coolest day was 74° at noon and 72° at midnight, while the water held around an even 80° all the time.

The naval reservation, with its dock, coal pile, ice plant and warehouses, occupies the only extensive piece of level land on the bay. Above, on a jutting promontory which commands the entrance to the bay and every foot of the harbor line, is the residence of the Governor of the island, occupied at the time of our visit by Captain E. B. Underwood, U. S. N. At the end of the bay, half-submerged in a forest of cocoanuts, bread fruit, bananas and mangoes, is the village of Pago Pago, the most important native settlement on the island. Several other small villages form breaks in the solid color of the verdant rondure, with occasional circular roofs of brown



Party of King Maatosa for Lurline in Apia

thatch dotting the gray ribbon of trail which binds them together.

Ever a splendid physical specimen and ever possessed of the kindest and happiest of dispositions, the Samoan has undergone less change in his contact with the white man than any other native of the South Pacific. This is particularly true of the Tutuilans, for the mailed fist of the German War Lord has rested heavily on Upolou and Savaii for much of the last decade, and one detects traces of sullenness and discontent among their peoples which are quite lacking in the care-free natives of the American island. Tutuila has, in fact, approached very close to the dignity of a model tropical colony. The government, except for a gently exercised judicial supervision, is practically autonomous, and the natives, left to the enjoyment of the customs and institutions of their fathers, have retained a self-respect, dignity and kindness unexampled under similar circumstances. Tutuila has proved a happy medium between the over-paternalism of the British and the repressiveness of the Germans and French, the result being an island where intercourse with the natives is unmixedly instructive and pleasant.

Captain and Mrs. Underwood came off the afternoon of the day following Lurline's arrival in Pago Pago, their call proving most opportune in chancing to coincide with that of Seuka, the taupo of the village. The latter, in company with her handmaidens, a dozen in all, bearing presents of tappa and fruit, came off in a whaleboat, and through neglecting to bring an interpreter with her narrowly missed being mistaken for a curio vender and put off till another day. The Underwoods came to the rescue, however, and prolonged their call until everybody was acquainted.

The taupo is a functionary as indispensable to a Samoan village as a chief or a missionary. She is, in fact, usually the daughter of the chief; or, if that dignitary has no girls in his family, the most attractive maiden among his near relations. The handmaidens are the eight or ten next most attractive unmarried girls, and are chosen for their faces and figures and their ability to sing and dance. Of the qualifications of Seuka and her retinue along these lines we soon had opportunity to judge, for the prime object of her visit was to officially invite us to a big siva-siva, arranged in our honor and set for the following evening in Chief Mauga's house, Pago Pago.

To the dance we went in state, convoyed by a flotilla of canoes sent down by Mauga, the occupants of which enlivened the progress by singing swinging choruses extemporized in our praise. After an especially elaborate kava ceremony, participated in by Mauga and his under chiefs, there was a spectacular spear juggling dance by a squad of his picked warriors, a dozen magnificent specimens of physical development. Then came Seuka, she of the downcast eye and blushing cheek and the long, trailing holaku of the previous afternoon. Now her eyes were flashing and her cheeks scarlet with anything but maidenly modesty as she came bounding in out of the darkness, crowned with a three-foot head-dress of lime-bleached human hair and wearing a necklace of sea-shells and—nothing else but a few wisps of fragrant grass about her waist and a shining ti leaf bound to each ankle. Round she came, solemnly shaking hands with each of the guests according to the inflexible etiquette, and then, her handmaidens having entered and ranged themselves in a row, she sprang to her dancing mat and led off in the first slow movements of the Samoan siva.

Lack of space forbids description here, but the impression of the dance and its settings—the half-lighted interior of the thatch-roofed, mat-floored dwelling, with slices of the blue moonlit night diverging to mountain and grove and bay through rifts in the woven blinds; the lap of the waves on the beach and the lisp of the wind in the bananas running through the boom of the tom-toms and the guttural chants of the spectators, and in the flickering light of the candle nut torches those glistening limbs of mahogany, rippling, swaying, flashing in the infinitely alluring movements of the siva-siva—is not one that will be easily effaced from the memories of us of Lurline who saw it all that night for the first time.

This dance was one of a dozen or more entertainments arranged by the natives during the time the yacht remained anchored in Pago Pago Bay. One day it was a picnic and swim at a mountain waterfall; again a canoeing party, and another time a session of song, pure and simple. The chiefs of nearly every village on the island came and paid us visits of ceremony and brought presents, some of them journeying two days and more by land and water. Our most distinguished visitor was Chief—formerly King—Tufeli, of Manua. Tufeli, a man of



Seas Breaking on the Windward Side of Tutuila Samoa

magnificent physique and attractive personality, came over for the express purpose of buying the yacht and sailing her back to Manua. He was not a little disappointed to learn that the Commodore would not find it convenient to turn her over to him in exchange for his season's copra output, but seemed considerably consoled by the barrel of salt beef we gave him as a compromise.

Most pleasant, too, were our relations with the officers of the Naval station. Shortly after our arrival Adams came to relieve Wheeling, and the fortnight during which the two warships were in the harbor together was a continual round of festivities. The Residency kept open house, as did also Judge E. W. Gurr, Chief Secretary of Native Affairs, in his beautiful half-Samoan, half-European home on the mountainside.

Judge Gurr, who is married to a daughter of Chief Seumani of Apia, was for many years Stevenson's attorney and most intimate friend in Upolou, and since taking charge of native affairs in Tutuila his thorough knowledge of Samoan character and his sympathetic interest in the welfare of the people have made his services invaluable to the American Government. Judge Gurr arranged a trip around the island for Lurline, with visits

to the principal villages along the coast, a fascinating excursion which was finally given up on account of uncertain harbor facilities. This trip was made, however, by Judge Gurr and the Weather Observer in the former's whaleboat, and turned out most interestingly, Lurline's representative, thanks to the Judge's prestige, being received with all the honors of a foreign potentate.

These islands are rightly called the Navigator Group, for both in their achievements of the past along that line, and in the seamanship they display to-day, the Samoans are in a class by themselves. The superiority of line of a Samoan outrigger canoe over that of those of any other South Pacific group is apparent to the veriest novice, as is also the ability with which it is handled. The following description of a Samoan "outrigger" by an expert may be of interest.

"Although these canoes are 'dugouts,' they are far from being the clumsy affairs that the name indicates. Though the hull is indeed dug out of a single log it is none the less moulded along lines of grace as well as utility. The hull is well sheared and tapered toward the slightly elevated prow, perpendicular and bladelike in its thinness. The hull is moulded with reference to fluid resistance and cut so as to minimize the drag of the water, and yet gain every advantage from a following sea. They do not spread or widen the hull amidships, even in the very small canoes, nor, on the other hand, are the lines of the outrigger (left) side at all flattened; the hulls are all symmetrical with respect to the longitudinal axis."

One used to handling a Peterboro will find a Samoan

dugout very cranky at first, owing to the fact that the outrigger causes a drag which must be overcome by dipping first on one side and then on the other. The size of a canoe is limited only by the size of the tree trunk from which it is hewn. Occasionally one is seen carrying seven or eight adults, but the capacity of the ordinary canoe is not over two or three.

In the old days the Samoans, like all the other South Sea islanders, made their long voyages in big double canoes or catamarans driven by huge sails of matting. This type, though still common in Fiji, has practically disappeared from Samoa, its place being taken by the malaga or whaleboat. This stoutly built double-ender is generally acknowledged to be the most seaworthy type of open boat known, and instances are on record of its having ridden out storms in which sailing vessels, and even steamers, came to grief. The Samoan started with the orthodox whaleboat and kept building larger and larger until the limit of practicable construction was reached. In fact, construction went somewhat beyond the limit of practicability, for a huge malaga built four years ago in Apia, a veritable Roman galley of an affair, with seats for a hundred rowers, broke its back on its trial trip. Nothing of so colossal proportions has again been attempted, though fifty-oar malagas are occasionally seen conveying the whole of a village cricket team off to a match.

The malaga most in use is but little larger than the regulation whaleboat. It is stepped for two masts, and with a big leg-o'-mutton sail hoisted on each makes good speed if the wind is anywhere abaft the beam. Within



Along the Shores of the Bay of Fanjo-So Samoa

eight points of the wind, if any sea is running, too much water comes aboard to make sailing practicable. At such times the canvas is taken in and the oars resorted to until a shift of wind or a change of course makes sailing again possible.

The Samoan invariably sings when he rows and stopping his mouth would be tantamount to tying his hands. They pull one man to the oar and take their stroke from the rhythm of the song of the leader. Ask your Samoan boatman how far the next point is, or how long it will take to reach it, and he will tell you "three songs," or four or five songs, as he happens to judge it. On a hot day a boat's crew will stop oftener to rest its throats than its backs. Entering a tortuous, surf-beset passage through a reef such as lead into all the bays of Tutuila except that of Pago Pago, a man takes his station on the prow of the malaga and signaling with his hands, now on one side and now on the other, keeps the helmsman advised of the lay of the channel.

Our Samoan laundryman was the source of considerable amusement. Several of those worthies came alongside on the day of our arrival, all bearing credentials of the highest order. One Maritomi, however, with a testimonial on the crested note paper of the Earl of Crawford affirming that the bearer had washed for Valhalla during her visit to Pago Pago and had done his work with neatness and despatch, made the most favorable impression and was given a trial bundle. Among the things was a number of white duck coats from which, in the hurry of arrival, the brass buttons had not been removed. These came back in time, neatly laundered, but unaccompanied by neither the buttons nor an explanation.

When Maritomi came around for the washing the following week he at first denied all knowledge of the buttons, asseverating that he was a "mitinary" boy and therefore could not steal even if he wanted to. This failing to make a satisfactory impression, he finally admitted that he had the buttons, but claimed that buttons were his rightful perquisites, and that he had kept the Earl of Crawford's buttons every wash and still been given a good character by his Lordship's steward. What was more, he intended to keep all of our buttons he could lay his hands on and was going to feel very hurt if we, too, didn't give him a good character on our departure. We didn't think we were better than the Earl of Crawford, did we? Of course there was no upsetting a precedent set by so illustrious a personage as the owner of Valhalla, and therefore it was that all that Maritomi threatened and desired came to pass.

On the morning of our departure when he came off with farewell presents of tappa and war clubs, the grateful Maritomi showed his appreciation of the testimonial we had given him by appearing in one of our white duck coats with "Lurline" buttons drawing it together across his brawny chest, while his delivery who accompanied him perspired in the unwonted grip of a dress coat of an officer of Valhalla. We forgave Maritomi much for the delicacy of feeling he displayed in putting the Valhalla coat on the delivery boy.

We found the breeze veering and uncertain as we beat out of the harbor late in the afternoon of the 9th of June, but ample working room and the absence of strong currents made the direction of the wind of little moment. Beyond the shelter of the harbor walls the waves, driven by an unusually heavy trade, were running tumultuously from the Southeast in frothy hum-

mocks of cotton wool. For a couple of miles, close-hauled, we stood straight out from the land, the yacht one moment burying her nose in a malignant curl of green, and the next tossing it skyward while a ton or two of water went bounding back along the deck and gurgled hoarsely out through the overworked scuppers. When the offing was sufficient sheets were slacked off and we headed down the coast on a broad reach, making good speed in spite of heavy rollings in the wrench of quartering seas.

The West blazed for a few moments as the sun went down, to be quickly quenched by a curtain of black cloud that was thrown across the heavens in a final shifting of the mise en scene for the most spectacular exhibition of marine pyrotechnics that is to be seen in the whole length or breadth of the Seven Seas,—a June night assault by the Pacific upon the Iron Bound Coast of Tutuila.

The Iron Bound Coast opens up beyond the first point West of the entrance to Pago Pago Bay and runs up the island for half a dozen miles or more, squarely across the path of advancing lines of seas that have been rushing to the attack and gathering weight, impetus and arrogance in a thousand miles of unbroken run before



Samoan Canoe Coming Off with Curios

the Southeast Trade. Their repulse is sudden, sharp and decisive, and the beetle-browed, black-ribbed cliffs do it without a change of expression. The waves have been beating their heads to pieces against these same frowning, impassive barriers for a million of years, more or less, and yet they are never able to overcome their surprise, never stoical enough to hide their resentment, never capable of restraining their expostulations. And what floods of supplications, what varieties of protests they pour out! If you approach near enough, following the thundering crash against the cliff, they appeal to you from where they fall with sobs of anguish and groans of pain; if you gaze from afar they beckon you with high-flung distress flags of white foam, and if you pass in the darkness they signal their despair with ghostly bonfires of glowing spume and phantom rockets of phosphorescent spray.

It was such a display that we were treated to on the night of the 9th of June, and under a fortunate combination of circumstances which made it particularly impressive. The seas about the Samoas are extraordinarily prolific of the animalcule which is responsible for the phosphorescence in the water, and in May and June occur its periods of greatest activity. That this night

was also moonless and heavily overcast made the conditions especially favorable. Daylight and twilight had passed in swift transition and the yacht was sailing in inky darkness as she rounded the point and opened up the Iron Bound Coast. For a moment the darkness held, and through it the imminent loom of the island was only a blur of darker opacity against the starless void above. Then a great splash of flame burst forth, and in an instant more the whole coast was picked out in lines of liquid fire, the reflections from which bathed the whole mountainside in waves of ghostly blue light. Here a great sea struck and erupted like a volcano set-piece, spreading out fanlike and falling back in lines of vivid light; there a big blow-hole exploded in thunderous geyser of flame, and close by a smaller vent projected, as from the nozzle of a hose, a slender, gleaming stream of liquid fire. In places, where the rock ribs of the cliff broke evenly, the flashes broke out in regular spurts of pale flame like those from the broadside of a warship, and again, where submerged rocks and crooked elbows threw one wave back upon another, there appeared great welters of green light that churned and bubbled and swirled like liquid lava.

Like the film of a biograph the vivid panorama of flame slipped past, and by nine o'clock the ridge of Sail Rock Point had interposed and blotted out the last of it. Beyond, the island broke into hollow, smooth-beached bays, where submerged reefs clipped the claws of the breakers and dissolved them in broad patches of faint luminosity before they reached the shore. At ten o'clock, in order not to reach Apia before morning, jib and mainsail were taken in and the night run out under foresail and forestaysail.

The smooth, green hills of Upolou were close at hand to the Southwest at daybreak, and at seven o'clock, with jack hoisted for a pilot, we were off the entrance to Apia harbor. The passage to the bay is broad and straight, but, the port being German, the taking of a pilot is compulsory. That functionary came out promptly in response to our signal, and a half-hour later left the yacht at anchor a quarter of a mile off the beach and a hundred yards from where, a broken-backed frame of rusting steel, the wreck of the ill-fated German warship, Adler, laid high up on the coral reef, just as it had been tossed by the waves in the great hurricane of 1889.

We heard from eye-witnesses the story of that hurricane when we went ashore in the afternoon; of how the powerful British Calliope, cheered by the doomed sailors of the American ships, forced her way in the teeth of the storm out through the passage to safety; of the destruction of Olga and Adler and Eber, and Trenton and Vandalia and Nipsic; of the frightful loss of life; of the heroism of the natives in risking their lives in the mountainous surf and treacherous back-wash to save their late enemies, and a hundred other things closely or remotely bearing on the great disaster. Told by men to whom the memory of the hurricane was still fresh and clear, with the theater of the great tragedy opening before us, and countless souvenirs of one kind or another at hand to crystallize interest, the recitals were graphic in the extreme and made deep impression on us of Lurline, the listeners. At evening as we came down to the landing for our boat the Commodore's gaze wandered from the great pile of riven steel on the reef to where the yacht, a slender sliver of silver, swung slowly to her anchor with the ebbing tide. At that moment the



Looking Down the Bay of Pago Pago, Samoa

last rays of the setting sun, striking through the gaunt ribs of Adler's sinister skeleton, threw a frame of black shadows across the water to rest for a moment in dark blotches on Lurline's snowy side and break the gleaming lines of her standing rigging into rows of detached bars floating in space. Then the sun disappeared and the outlines of reef and wreck and schooner began dimming under a veil of purple mist.

"I don't go much on signs myself," said the Commodore musingly as he seated himself in the stern sheets of the waiting boat and took the yoke lines, "but I suppose there are a good many sailors who would worry about a coincidence like that. Funny thing, too, that just as it happened I was trying to figure out what kind of a chance our poor little Lurline, without steam or power of any description, would stand in a storm that could throw a ship like Adler high and dry out of the water. And—hurricane season is coming on, you know—I'm still wondering a little, that's all."

Strangely enough, it was written that the question should, in a measure, be answered within the fortnight, though the demonstration, fortunately, was not to take place in a reef-encompassed harbor.

SAMOA TO FIJI

The bay of Apia, like that of Papeete, is a typical South Sea harbor; an open roadstead on the leeward side of the island, with a reef cutting it off from the sea and giving good protection in ordinary weathers. The only reason that there have not been other great disasters like that of 1889 is because there has never again chanced to be so many large ships in the harbor when a hurricane came along. The hurricanes still blow up every now and then, and, just as in the historic storm, all the shipping that cannot go to sea goes ashore. The bottom of the bay is almost as thickly littered with trading schooner wreckage as with pink coral.

The town of Apia, though picturesque—what South Pacific village is not?—has scarcely the fascinating charm of Papeete with its crumbling sea-wall and avenues of giant trees. The business section of the town consists of a half-mile straggle of galvanized iron stores following the line of the beach road, with numerous copra warehouses and several stubby piers breaking the sweep of the foreshore. The houses of the natives are scattered about through the coco-trees on the flat, while the European residences, bright blocks of white, dot the lower slopes of the mountain beyond. Government House, cool, spacious, inviting, stands apart from the others in the midst of its well-kept grounds, and higher still, through rifts of the encompassing verdure, brief glimpses may be had of the broad porticos of Villa Vailima, the old home of Robert Louis Stevenson, the loved Tusitala of the Samoans.

As a colonial experiment German Samoa—the islands of Upolou, Savaii, Manono and Apolima—has not been a startling success. During the first four years of the militant Teutonic government disaffection became rife among the natives, agricultural production fell off and trade languished. Realizing that a change of policy was imperative, Emperor William sent out to Apia one of the most distinguished statesmen and scholars in Germany, Dr. Solf, and under the latter's wise régime much of the lost ground has been regained. Dr. Solf was in charge when Lurline visited Apia and we found him among the most attractive of the several foreign executives encountered in the South Pacific. He has been prominent in German yachting circles for years, and on

one of his calls aboard he appeared in his uniform of an officer of the Kiel Y. C.

A particularly pleasing coincidence of our visit to Apia was the arrival there, on the day following our own, of the auxiliary schooner yacht, La Carabine, of Melbourne, with her owner, Sir Rupert Clark, and his brother, Lieutenant Ralph Clark, R. N., aboard. Sir Rupert is the eldest son of the famous philanthropist, Sir William Clark, and in addition to being the richest man in the commonwealth and its most prominent racing figure, is also distinguished as being one of the only two Australian baronets. His brother, Lieutenant Clark, for some years the navigating officer of the flagship of the British Australian Squadron, resigned his commission to sail La Carabine for the cruise on which she was then embarked.

La Carabine we found to be a stoutly built schooner of fifty tons register constructed in Auckland expressly for sailing in Polynesia and Micronesia. Her heavy channels and running bowsprit marked her at once as British, while her stubby foremast and huge lifeboats suggested the trader rather than the yacht. She was equipped with gasolene engines capable of driving her five knots an hour in a smooth sea. The yacht took her name from



Lurline at Anchor in Apia Harbor

Sir Rupert's famous racer, La Carabine, winner of the classic Melbourne Cup of a year or two previously.

The Clarks had already visited several ports in the Tongan group, and from Samoa were planning to cruise for some months among the wild and practically unexplored islands of the New Hebrides, the Solomons and New Britain. In many of these islands money has no value whatever, a contingency which had been provided against by stocking a barter room on La Carabine similar to those of the regular traders. Here were carried prints, knives, guns, jewelry, tinned meats and tobacco, which were to be exchanged for pigs, fish, fowl and curios. Nor was the matter of defense neglected. Just forward of the house a swivel had been set in the deck, and the installation completed to greet the first cutting-out party with a hail of bullets from a vicious-looking little Maxim set thereon. The gun was served by an old man-of-war's man shipped with the crew for that purpose. We never heard whether or not occasion ever arose for its serious use.

A number of very pleasant affairs were arranged for the joint pleasure of the yachting visitors, particularly enjoyable proving picnics at Vailima and Papa-sea, the Sliding Rock, teas on several of the large plantations

and at the consulates, a dinner at Government House, and a couple of native dances at Chief Seumanu-Tafu's. The latter were directed by the chief's daughter, Vau, the taupo of Apia, a young woman of fine face and figure, and of considerable quickness of wit as well, if the manner in which she put our good friend Clark to the blush one afternoon may be taken as a criterion.

Vau and her handmaidens were off to tea on La Carabine, preliminary to a swimming party at Papa-sea. Governor Solf, Dr. Clarence Fahnestock, of the New York Y. C., on his way home from the Tongas, and a couple of us from Lurline were also present. The talk turned on reforms, political, economic and industrial, lately instituted in New Zealand. Clark, in explaining the stringent prohibition laws in force in that colony, made the statement that a man once convicted of drunkenness in a New Zealand hotel forfeited his right to register at any hostelry in the country. Upon hearing which Vau looked up and, with just enough twinkle in her eyes to belie the innocence of expression that sat on the rest of her face, cooed sweetly, "So you have now to stay with frens, Sir Rupert, when you go Nuzelan?"

And Clark, the suave, the debonair, the cool-headed; Clark, for years the endlessly-angled-for catch of two hemispheres; Clark, who took the coveted Melbourne Cup without the flicker of an eyelash, blushed and stammered like a girl in an effort to explain. Finally, judging the temper of the company unpropitious, he gave up his ill-advised effort to save his reputation and took his revenge an hour later by pushing Vau, with all her finery, over the brink of Papa-sea.

The London Missionary Society steamer, John Williams, came in and laid alongside us for a few days before

we left Apia. John Williams was the pioneer missionary of the South Pacific, and since his death at the hands of New Hebridean natives every ship of the Society has borne his name. For more than fifty years these were schooners, and as each was piled up on a reef in turn, its name, with the number next in line affixed, was passed on to its successor. This continued until steamers finally supplanted schooners, when the serial system of nomenclature was dropped. The present John Williams, the fortieth, or thereabouts, of the name, is a Clyde-built steamer of something over 3,000 tons. It has unusually graceful lines and is able to do better than 16 knots an hour if required. Its principal duties are the provisioning of mission stations scattered throughout the Southwest Pacific and the carrying on of a most lucrative trading business which the Society conducts in opposition to its arch enemies, the real traders.

John Williams proved a most unsociable craft, refusing to meet any of the timidly tentative advances of the visiting yachts. The solemn, black-coated figures in the stern sheets of its boats would pass La Carabine and Lurline with averted eyes, evidently classifying us, with all the rest of the whites, as instruments of the world, the flesh and the devil sent to demoralize the simple native.

On June 13th we received word that Chief Mauga's flag-raising at Pago Pago, a function at which we had promised to be present, had been scheduled for one o'clock of the 15th, in order that the officers and men of Wheeling, which was to sail that afternoon for Bremer-ton, might participate. This necessitated leaving on the 14th, just as we were getting comfortably settled down to a full enjoyment of hospitable Apia. A whistling



Cargo Lighter in the Harbor of Suva, Fiji

East wind on the starboard beam carried us out of the passage at a rattling gait, but only to come squarely ahead as we trimmed in for Tutuila. All afternoon, against a rising wind and sea, we sailed in short tacks up the coast of Upolou, and by 9 p. m., with double reefs in mainsail and foresail, just managed to clear Albatross Rock, five miles east of the windward end of the island.

At daybreak Tutuila showed dimly, a point forward of the port beam. Reefs were shaken out at eight o'clock, but the tiresome beating continued until we doubled Sail Rock Point at 1:30. From there we made fair wind of it down the coast and into the harbor. When the anchor was let go at 3:50 Mauga's flag had been flapping in the breeze for close to three hours, and Wheeling, with a 300-foot "Homeward Bound" pennant streaming from her main, had just cast off her mooring lines and was backing into the stream.

Before leaving Apia we discharged our Chino-Malayan cook, Harrick Siah, shipping in his place one Andrew Clark, a West Indian. Clark had married a Samoan girl the week previously, only to have her elope the next day with the native missionary who performed the ceremony, taking with her the accumulated savings of the unlucky cook's last year of voyaging. Being thus left "on the beach," as they put it there, nothing was left for him but to ship again. Now Siah, who was but five feet two in height, had been able to walk erect in the galley's five feet three of headroom, as had also his diminutive Japanese predecessor; Clark's five feet nine required something more than six inches of reefing to swing in the clear, and even then ran afoul of occasional hooks and pipes and other projections. The poor fellow stuck manfully to his job, but within a fortnight the reef points of his neck became so firmly tied that, even after he had been an hour or two ashore, we would see him on the streets or in the market with hunched shoulders and drawn-in neck.

We sailed for Fiji on the afternoon of June 18th. Just as the anchor had been catted and the yacht was filling away on her first tack a madly paddled canoe shot alongside and a letter was thrown aboard. It was addressed only to the "Yotta," no individual being specified, and ran as follows:

"Talofa. My love to you. Please send me one bicycle."

It was signed by one of Seuka's handmaidens. For a simple, direct appeal, this comes pretty near the record, and it is a pleasure to relate that, six months later, it met with a deserved reward. There are several ways to reach it, but no smoother road to the South Sea maiden's heart than the bicycle path.

As we stood in past Adams a crowd of our native friends on the dock began singing the plaintive Samoan farewell song, "Tuta-pai, mai feleni," and the oft-repeated refrain of "O Ai neppa will fa-get you," followed us till the yacht passed out of hearing around the point. The kindest, handsomest and most amiable people in all the South Pacific, these Samoans.

It was our hope to put up a new record for the Samoa-Fiji run, as we had done for that from the Marquesas to Tahiti, but the flukiness of the wind, which became apparent as soon as we were clear of the harbor, held out little promise of success. The air was abnormally clear and the sky, unusually deep and rich in color, hardly flecked by a cloud. The sea, owing to the veering tendency of the wind, was light and even. The wind was blowing fitfully from its regular quarter, E.S.E., when

we came out in the early afternoon, but shortly began coming in puffs from due East. Then it blew slightly more Southerly for a half-hour, before hauling up to E.N.E., and so all afternoon, as a tide creeps foot by foot up a beach, it kept chopping around to the North. By dark it had worked on to N.N.W., and was blowing, not steadily, but in jerky puffs of ominous import.

The sunset that evening was a sinister thing of red and black. The sun, glowing like a huge coal, dropped down behind the Southwest end of Tutuila just as the veering wind drove up a bank of sooty clouds from the lee of the island and began blowing it to pieces. The clouds tore up into inky strips, darkly opaque like the bars of a grate, and between the bars, sullenly, hotly red, the unobscured sky glowed like the inside of a furnace. For the space of a minute, or two, or three, this held, with its magnified reflection upon the sea showing in alternate welts of glimmering purple and sang du bœuf; then a new flight of cloud hove up from the lee of the island and, as a closed door quenches the light of a furnace, hid



Native Fijian Police on Visit to Lurline

the fire of the West behind its impenetrable pall. The mate characterized it politely to the ladies as an "angry sunset," and then went forward and alluded to it in mixed but forceful metaphor as "bloody murder swingin' on the hinges o' hell."

An insufferably hot and stuffy night gave way to an equally unpleasant day. The sea was oily smooth, the sky overcast with a dull, translucent film of cloud, and the sun, heavily ringed, grew increasingly dimmer as the grayness thickened overhead. The run to noon from 3 p. m. of the 18th was an even hundred miles.

The wind, still from the N.W., increased steadily as the afternoon lengthened, the yacht, under all-plain sail, driving along at close to nine knots an hour. About four o'clock, while still making fast time, she struck a large floating log—apparently a bread-fruit trunk—which gouged a long gash on her starboard side as she drove past it. The blow was a glancing one and nothing but the paint was damaged, though the consequences might have

been really serious had the point of impact been 20 feet farther forward.

The sun went out behind a horizon of dull, black mud, and through the greasy dusk that was settling over the sea the wind came pouring out of the West with constantly accelerating force. Overhead, the clouds—mostly detached blotches of cumulo-nimbus—surged about in seeming aimlessness, those of the lower air scurrying away before the Northwest wind that drove the yacht along, while, a couple of thousand feet or so higher, a counter current of great force from the Southwest was ripping to pieces the vaporous masses of the upper heavens and stringing them out in long lines like the wake of a fleet of ferryboats. In the intermediate levels stray mavericks of cloud were pivoting about like prairie cattle milling in a blizzard. The sea, owing to the tendency of the wind to continue hauling Westerly, was not running heavily as yet, but a barometer at 29.70—24 points drop in 27 hours—and the ominous aspect of the heavens gave fair warning that it was not the explosive broadside of a passing squall that was to be encountered this time, but the sustained bombardment of a real storm.

We were still a couple of months away from the hurricane season, but hurricanes, like nuggets in the prospectors' proverb, are where you find them, and it was



Fijian Canoe

on record that they had occurred every month of the year in the Southwest Pacific. At any rate, the time for preparation for weather of some kind was plainly at hand, beginning with an immediate and expeditious shortening of canvas. No halfway measures to tide over a few hours' blow were resorted to. The maintopmast staysail was taken in and the lower sail reduced to double-reefed foresail, triple-reefed mainsail and reefed and unbonneted forestaysail. Extra lashings were thrown on boats, water-butts, spars and other movables, and the skylights were closed and battened with planks to protect from waves that might break inboard.

Things were snugged up just in time, for at eight o'clock, to the accompaniment of a tenth more drop in the barometer, the storm broke fiercely in a heavy squall of rain; the next thirty-six hours were crowded full of education in the ways of a South Pacific gale. The after leach of the foresail carried away at nine o'clock and for some minutes the flogging canvas played a lively game of crack-the-whip with the sailors who were trying to smother it. Soon the effect of the wind began to show upon the sea, and all through the night the increasing force of the staggering blows upon the weather bow and the Maxim-like rattle of spray upon the sails told of steadily mounting waves. Rain kept pouring in heavy

squalls, the fierce blasts serving to beat flat for brief spaces the rising swells, but only to release them to more furious onslaught the moment the compressed-air buffer of the wind rolled on ahead.

At midnight the barometer was down 29.50, after reading which the mate came on watch complaining that some one had knocked the bottom out of it. The yacht was behaving splendidly and, except for the threat in the falling of the barometer, our only serious worry was the uncomfortable proximity of the extensive Curacoa Reef and Shoals. We were chopping along on a W.S.W. course, which, allowing for a reasonable leeway, we reckoned would carry us by a good ten miles to the windward of the danger point. Nevertheless, remembering our experience of Bellinghausen Island, a sharp watch was kept to leeward until morning.

Daylight broke from the Southeast through an infernal cloud-shoal of copper and sulphur and tallow and olive upon a desolation of wallowing snow-capped mountain peaks. The wind, which the previous afternoon had been blowing with a force of less than "5" in the Beaufort Scale, had held from the same quarter all night and was now blowing at near "9." Seas, confounding in height, steep and sharp-crested, with hollow green sides and black, swollen bases, came charging down from the West in broken-ranked stampede. The yacht, under the scanty canvas still on her, was wonderfully buoyant, rising and falling to the waves like an empty biscuit tin, her comparatively short length giving her an advantage in recovering from a dive into the depths in time to meet the lift of the coming wave that would not have been shared by a larger ship. The decks were repeatedly swept by the last yard or two of a sharp crest that she could not quite surmount, but not once did she put her bowsprit into green water when she had not pulled up to an angle that allowed her to shake free from the ensuing deluge in time to meet the next wave.

The leaps from hollows to crests, and from crests back to hollows, were positively appalling in the contrasts of the sudden transitions. Up out of the fog of foam in the trough the yacht would stagger, and not until she stabbed the curling crest and began teetering undecidedly on the ridge would the wind that had been shrieking in the upper rigging have a chance to strike the hull. Then it came all at once, a palpably solid block of air, and no man could stand against it on the open deck. An instant more, and it was as though the world was falling away beneath her, and down, down, down she would go until one stirred and glanced at his neighbor and set himself for the jar of the keel against the bottom of the sea.

It was those age-long moments in the hollows, with half the weather sky and all the wind cut off, with the eyes blinded and the throat choked with spume, the ears deafened with the thunderous volleys of the flapping sails, and in the heart the vague and ever-haunting dread that the next wave would be the one to break, the one against which the yacht's seaworthiness and the helmsman's cunning would alike be of no avail, that were the hardest to endure. The trough of the sea in a big storm is the nearest thing to primal chaos that can be experienced in this age; only one must be in a small craft to get the full benefit of it.

The Commodore had just come on deck at seven o'clock with the disconcerting news that the barometer was down to 29.30 and still falling, when the lookout threw a bombshell on his own account into the cockpit by shouting something about sighting land abeam to lee.

No one said anything as the yacht began to climb the next wave, but "Drifting on Curacoa Reef" was written plain on every face; the angling slant of our quickly-quenched wake told only too plainly of the fearful leeway we were making. Each clawing the salt dust from his eyes with one hand, clutching a shroud or halyard with the other and bracing mightily against the wind, we waited for the view to open up to leeward as the schooner reached the ridge of the soaring sea up which she toiled, to behold with untold relief, not the imminent and unending line of great breakers on a coral reef which we had expected, but a black triangle of rock, fully 15 miles distant, standing sharp and clear as the Cheop's Pyramid against the leaden sky.

"Boscawen Island; barren rock, 2,000 feet high," quoted the Commodore from the Directory; to add, with renewed excitement, "But if that's Boscawen Island, then where in the name of—Neptune—is the Curacoa Reef and Shoals?" Then, his eyes turning to the windward horizon in a puzzled search as the yacht topped the next wave, "We must have drifted right across them if the chart's right."

We watched for an hour for the phantom reef with no result. There was little left to worry about on the score of danger, as we were well to the lee of the points dotted out as shoal on the chart, while in our own lee



Type of Fijian Canoe Showing Platform on Outrigger

the sea stretched clear and open to Boscawen and beyond; but the manner of the mystery of this piece of marine legerdemain was—or would have been at a time when there was less to think about—an absorbing problem. Certain it was that our leeway was proving greater than our headway; also that, irrespective of the correctness of our reckoning of the day before, the yacht could not have reached the position she was in without drifting squarely across some portion of either the reef or shoal as charted. As sailing over the reef was impossible, and over the shoal, at least unknowingly, improbable, we were left to the conclusion that, notwithstanding the fact that neither are marked "P.D.," both are incorrectly located on the chart. Outside of the half-dozen archipelagos most navigated chart errors in the South Pacific are by no means uncommon.

At eleven o'clock in the forenoon, with the barometer at 29.25, the wind, blowing more furiously than ever, hauled suddenly to S.S.W. At 11:45 the forestaysail carried away, and, with every fresh blast threatening to strip off the remaining canvas, it did not take long to arrive at the conclusion that we were approaching, rather than getting away from, the center of disturbance. Whether we had a fully developed hurricane to contend with, or, as is quite possible, a Southwester of unusual

violence, we could not definitely determine. The sinister sky, the low barometer, and the action of the wind up to that time all said "Hurricane"; the season, and the fact that the wind held unveeringly from the S.S.W. for the next twenty-four hours, has since led us to incline to the "Southwester" theory.

Assuming at the time, therefore, that we were boring into a hurricane whose center was to the S.S.W., we made up our minds to hurry away from that center as expeditiously as possible. Accordingly, after a new forestaysail had, with considerable difficulty, been bent in the place of the one carried away, all the rest of the canvas was taken off the yacht and, under that sail alone, she was put on the port tack before the wind.

All that afternoon Lurline ran like a frightened deer, with the waves, like hounds, coming up on her trail and snapping viciously at her flanks as they rushed by. Time and again the helmsman, grinding the wheel hard up to keep her before the wind, would glance with the tail of his eye at a foam-blotched wall of green that blotted out the sky astern, to hunch his shoulders and grip his spokes the tighter, waiting with tensed muscles and set face the blow that menaced from above; time and again, yawing desperately as the tail of a galloping sea gave her nose a tweak, the yacht would seem on the point of broaching right under the hollow wall of the comber next in line; time and again—to lee on the wind-swept crests and to weather in the cross gusts of the hollows—she would roll a rail deep under and dip up a deckful of solid water from which she could never quite clear herself before another came sousing aboard from the other side; and yet nothing happened.

Meanwhile active preparations for meeting the "worse to come" were underway. A storm trysail was dug out from the obscurity of a musty corner of the lazarette, spars lashed up for a sea-anchor, bags of oakum soaked with oil, and the lifeboats provisioned and watered. When there was nothing more to get ready some one looked at the barometer to find—this was about four o'clock in the afternoon—that it had risen .12 since noon and was still displaying optimistic tendencies.

As it was our intention to run only until the barometer began to rise, all hands were promptly set to bending a new foresail in the place of the one carried away the night before. When this was accomplished we hove her to on the port tack under foresail, close-reefed, and the forestaysail that was already on her. After that, though the sea continued to increase for some hours, she rode out the night with her deck unswept by anything heavier than the driving spray.

All night the barometer mounted, till at daybreak of the 21st 29.60 was passed, a juncture at which it was deemed safe to resolve the unused sea-anchor into its component parts and stow the storm trysail and oil bags against another storm. The wind blew fiercely from S.S.W. all day and not until midnight, when it began chopping around to S.S.E., did the sea show any signs of falling. Then it began smoothing off rapidly and by daybreak the yacht stood very comfortably the addition of close-reefed mainsail and jib.

At noon of the 22d reefs were shaken out and all-plain sail carried for the first time in four days. The barometer was by then up to 29.78, while the wind, blowing steadily from S.E., enabled us to finally get back on the Fiji course of S.W. by W. The unclouded sky was a dome of cobalt again, and the sea, coldly green and laced with streaks of foam, a rolling plain of jade; but

in spite of fair weather the temperature of the air was away down to 74° , and the water but four degrees warmer. The sea, under the influence of the veering wind, continued to fall rapidly all afternoon. At 6 p. m. the lone rock of Niuafoou, the most Northwestern outpost of the Fijis, appeared on the Southern horizon, to be almost immediately swallowed up in the gathering dusk.

By morning of the 23d the wind was back in its regular quarter, E.S.E., but blowing so gently that the yacht, though carrying most of her light sails, could average no better than six or seven knots an hour. The run to noon was 158 miles.

The lookout caught the flash of Weilangilali Light at 3 a. m. of the 24th, and by daylight we were well down the Naniku Passage into the Fijis. The wind was light but steady from S.E. by E., and the scores of small, low islands to windward, cutting the swell almost completely off, made splendid sailing. The flat horizon, unbroken save by the blur of an occasional island, was a welcome relief from the wave-rumpled skyline we had left behind in the open sea. The Fijian Archipelago is a veritable nest of reefs, large and small, and islands, both coral and volcanic, of every degree of magnitude. We picked up island after island during the day, and at night they still continued to push up ahead, gray banks of enchantment in the silver sea of the moonlight.

Two of the curious rocks which we passed in the course of the day, on account of their peculiar and distinctive outlines, are down on the chart as Hat and Cap Island, respectively. This circumstance is responsible for the following laconic entry in the "Ladies' Log:"

"June 24th.—Passing Hat and Cap Islands caused quite a flutter in the bonnet of the forestaysail."

The 180th Meridian was passed early in the afternoon of the 24th, upon which that day became immediately Saturday, the 25th. This made the next day Sunday, which fact poor Clark, the cook, learned so tardily that it was only by the maddest of efforts that the indispensable "duff" was prepared in time for dinner.

The tradewind gave way to the cool land breeze from Viti Levu in the early morning of the 26th. This, fresh with a welcome earthy smell, coaxed the yacht gingerly along for several hours, only to die out toward noon and leave her becalmed 15 miles off Suva entrance.

With every foot of sail spread to make the most of the vagrant puffs of wind that were coming occasionally from the north, the yacht had shouldered along with the swells to within 10 miles of the harbor, when the pilot, coming off in answer to our signal, boarded us to say that we might as well lower our sails and prepare to spend the night where we were. Promising, in case the wind was blowing, to come off in the morning and take us in, he bade us an officious good-bye, clambered down into his boat and set his crew of convict rowers pulling back to the land. Five minutes later the breeze freshened and the yacht, slipping swiftly through the smooth water, passed the pilot's boat and left it half a mile astern before we luffed her up and waited for that thoroughly discomfited functionary to come up and climb aboard. An hour and a half later we had threaded the tortuous, buoy-marked passage through the reef and come to anchor a cable's length off the end of Suva pier.

(To be Continued.)



Oystermen in the Maurice River New Jersey



Jersey Coast Fishermen Getting One of Their Power Seabright Skiffs Off and On the Beach

SCOTTISH POWER FISHING VESSELS

J. Rendell Wilson

DURING the past two years a great step has been made in connection with the introduction of the internal combustion engine in the fishing fleets working the east and west coasts of Scotland. Three years ago there were not more than two power craft (not counting steam drifters and trawlers); but at the time of writing the development has been so great that about seventy large vessels and one hundred and fifty small craft have been fitted with engines. In fact, an exhibition of heavy oil engines for fishing boats has just come to a successful conclusion at Yarmouth, England, whither the entire Scottish sailing and power fleets had gone for the annual herring fishing.

Considerable difficulties, including prejudice, had to be overcome by the manufacturers whose agents were endeavoring for years to induce the hard-headed Scots to adopt power, and the change was only brought about by sending demonstration boats to work side by side with the sailing vessels. When it was found that the power boats could get to port first and obtain higher prices, the fishermen realized that there was something in engines after all.

Now it is said that the Scottish fisherman, who got used to power, never again steps aboard a "sailer"—unless it is to fetch his brother!

Another difficulty met with was that the fishermen expected high speeds with moderate power, in order that they could beat the powerful steam drifters, and it took a long time to convince them that such a thing was impossible with such heavy craft, which are usually built without drawings, on the open seashore, by builders who move from port to port as occasion, or business demands. The engine manufacturers' idea was, of course, to convert existing boats, in order to reduce the cost to a minimum.

The increased earnings of the converted vessels have been unquestionable, and during *fourteen weeks'* fishing

recently, the catches of Buchans, an Inverallochy boat, realized a total of over \$3,500, and Nellie of St. Cambs, made \$3,250; while the remainder of the power fleet averaged \$2,250 apiece. The cost of fuel for each boat for the fourteen weeks was about \$300, so that after paying the crew, the skippers, who usually own their own boats, made handsome profits. These boats were working with sailing craft whose takings averaged only \$1,300 per boat. Such results as these went far in advocating the advantage of power.

The Scottish vessels have been fitted with engines by British, American, Dutch, and Swedish firms, the American section being represented by Remington and Fairbanks-Morse machines. There is still ample opening for American firms, as there are some thousands of sailing craft that have not yet been equipped with power. What is required for these boats is a three or four-cylinder engine developing from 50 to 80-h.p. at 300-550



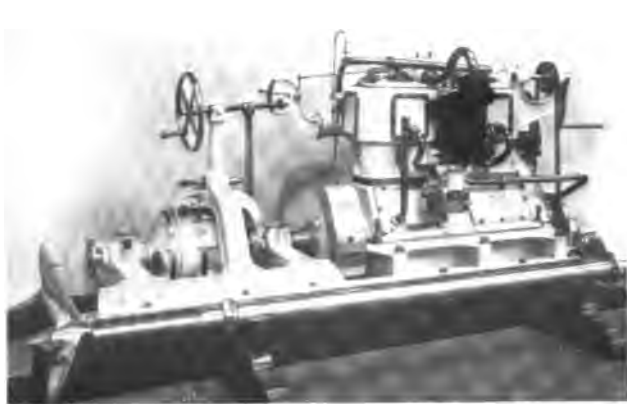
Margaret Dawson. Power Simplifies the Task of Getting In and Out of Harbors Under Adverse Conditions



The Captain of Sardinus Takes Out His Friends for a Day's Cruise

revolutions per minute, on heavy kerosene or crude oil fuel. But firms must waste no time and be quickly on the scene of operations.

A description of one of these vessels and her installation will perhaps be of interest, not only to American manufacturers, but to readers of *THE RUDDER* the world over, and as an example of a particularly successful craft I will take Sardinus BF985, a boat belonging to the great Scottish fishing port of Banff, owned by Mr. John Slater, of Portknockie, 15 miles from Banff. She is of what is known as the "Zulu" type, and is 80 ft. in length over all, 70 ft. on the water-line, and 60 ft. on the keel, by 20 ft. breadth. The greater part of the hull is, of course, taken up by the fish-hold, forward of which is a space used for storing gear, etc. Aft of the hold is a space for the nets, three feet long, extending the full breadth of the ship. Next is a cabin with eight bunks forming the sole living accommodation of the crew. But also in this compart-



Starboard and Port Side Views of 50-H.P. Thornycroft Engine in *Sardius*

ment is fitted the engine, so in view of the comfort of the crew, care was taken to avoid "hot pot" ignition; as in summer time the heat and the resultant fish stench, would have been unbearable. In this particular vessel the fish-hold is divided from the engine-room by a thick bulkhead so that any fumes cannot taint the fish. The timbers of the hull are large, and are planked with very thick wood, so that the fitting of engine bearers was an easy matter. Her equipment is a four-cylinder Thornycroft engine driving a two-bladed bronze propeller through a reverse gear. The cylinders have a bore of six inch by eight inch stroke, and 50-h.p. is developed at 550 revolutions per minute, giving the vessel a speed of nine miles an hour. For fuel a low-grade kerosene is used, but starting is effected by gasoline, or blow lamp, the main tank having a capacity of 60 gallons. The consumption is about $3\frac{1}{2}$ gallons per hour, or .6 of a pint per horse-power hour. As the fishermen usually run the engine themselves, high-tension ignition has been adopted, it being considered less complicated. A Bosch magneto is fitted, and for simplicity of wiring the terminals are painted green, red, yellow and blue. (By the way, I may mention here that the fishermen are fond of gaudy colors

so that it is advisable to paint the engines like Joseph's coat.) The cylinders and exhaust are amply water-cooled by an Albany pump driven off the crank-shaft at the forward end, while for starting a neat chain drive has been erected. For repairs, or inspection purposes, there are large doors in the crank-case, through which the bearings and pistons may be removed with ease. An important feature which should not be overlooked is the small round tray placed under the carbureter to catch any drippings, for reducing the risks of fire. Lubrication is on the forced system throughout, and a neat gauge informs the fishermen of any drop in the pressure.

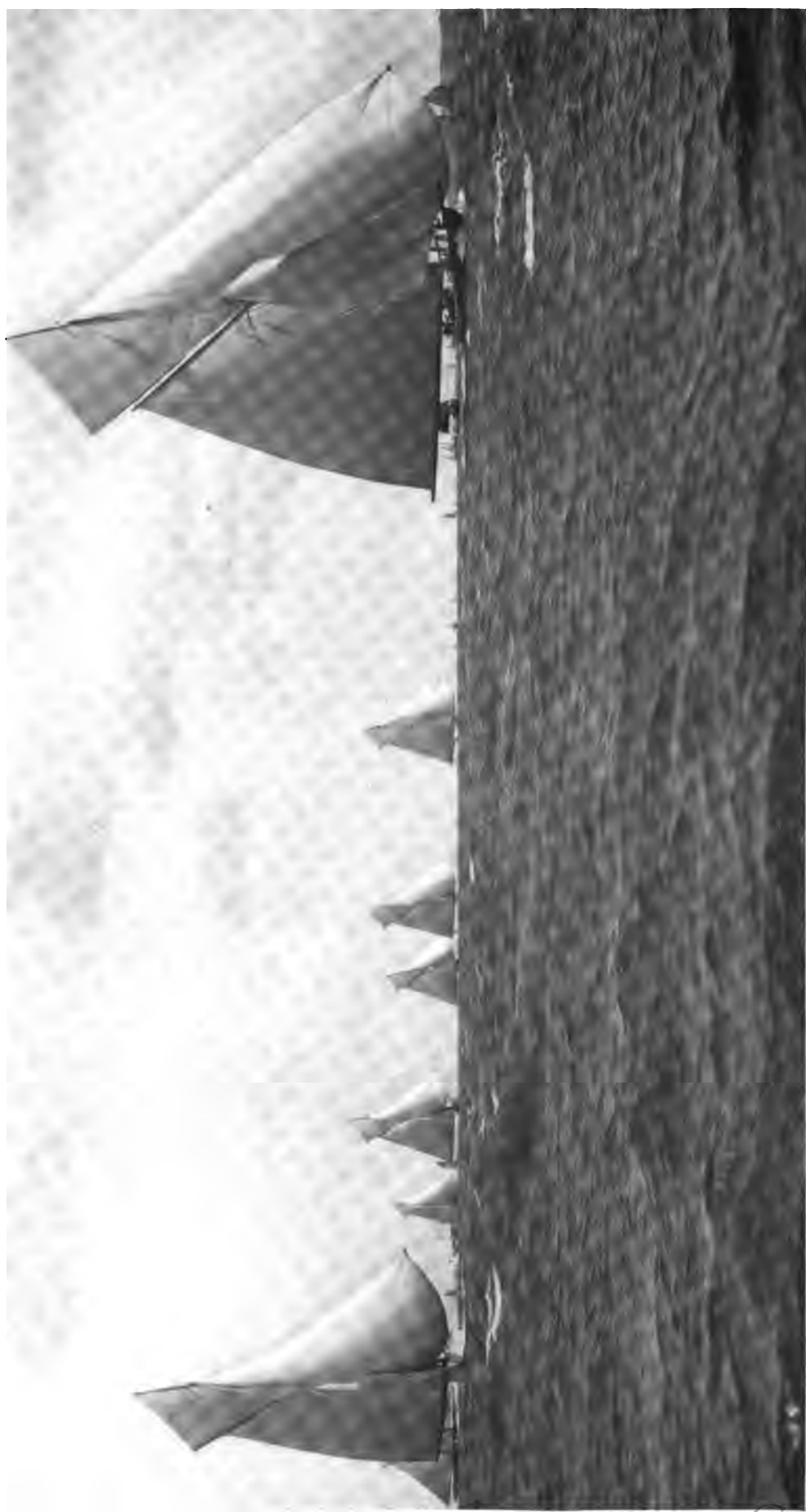
In conclusion, I may say that since her installation in the Spring of 1909, which only necessitated a slight alteration to the stern-post, *Sardius* has not given the slightest trouble, although her engine has been constantly at work. Her engine, of course, is not always in use, as she carries plenty of canvas, being originally a sailing vessel. As I write pressure is being brought to bear on the British Government, to provide a state loan to fishermen who wish to install power. Should the movement be successful there can be no doubt that thousands of fishing vessels will be so equipped.



Mertie B. Crowley, a Typical American Coaster



The Clyde 12-Metre Class at Cowes Regatta 1910. Cyra, Hera Nargie, Alachia Cintra and Javotte
Photos by A. E. Beken & Son, Cowes, I. W.



The 15-Metre Class at Cowes Regatta 1910. Tritonia Bloodhound Sonya Gauntlet, Paula Mariska and Vanity

HOW TO BUILD A 15-FOOT CATBOAT, SEA GULL

Fred. W. Goeller, Jr.



CATBOATS, a few years ago, were the most popular type of small sailing craft, but every few years there seems to be a reversion of type, and with the advent of the knockabout the cat-rigged boats were relegated to the background by most yachtsmen, and it remained to comparatively few to stand by and keep up the traditions of this type.

That the catboat is again coming into its own is shown by the increasing demand for the boats in the last few years, and in the interest aroused by the Inter-Bay Championship races held in Narragansett Bay during the past Summer.

One of the most popular types, and those mostly in demand lately are of the breed commonly called "Cape Cod Cats." These are wide, strongly built boats, with a generous freeboard and good sheer. They usually have a good strong bilge and while carrying quite an amount of sail are very stiff for a centerboard boat.

The design shown in this article is of a little 15-footer, designed and built for one of THE RUDDER staff

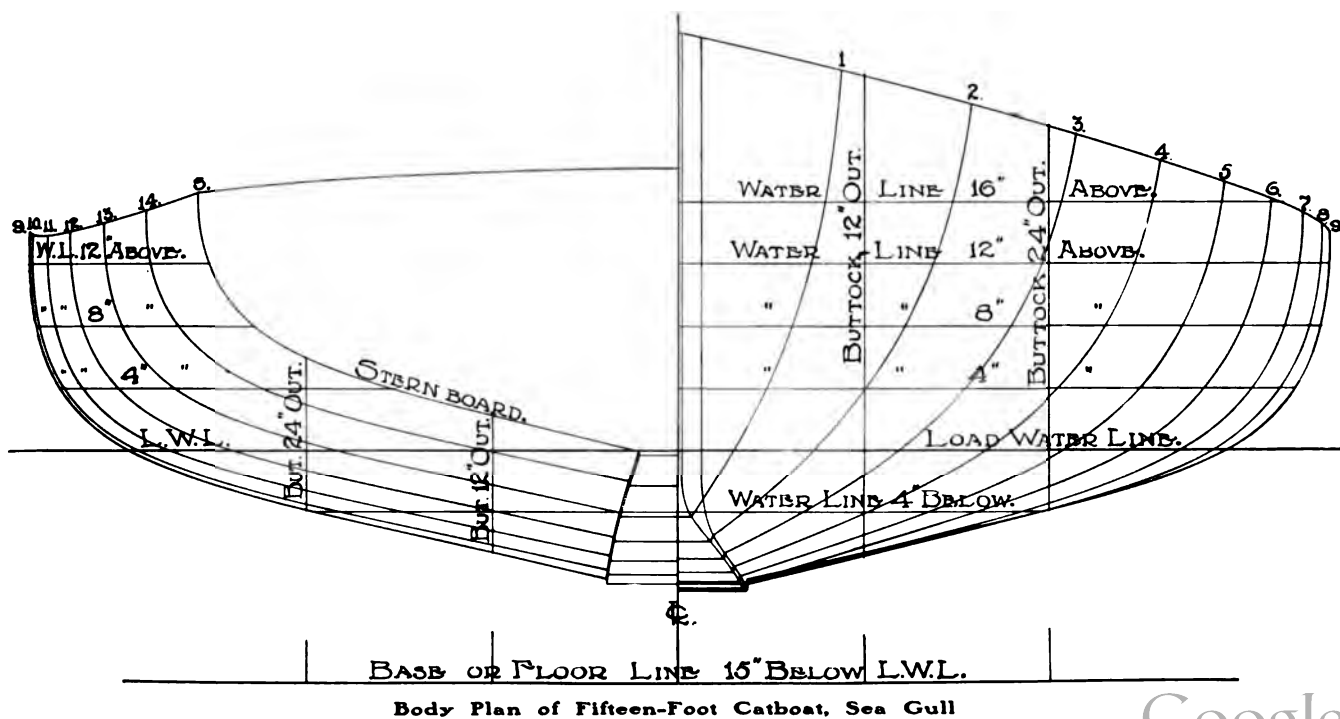
as an all-around knockabout craft for day sailing on New York Bay and adjacent waters. The construction is simple and so far as possible has been explained on the drawings.

To obviate the necessity of laying the boat down, which is an impossibility in a great many cases for the amateur, dimensions have been given for the rocker of the keel, the trunk logs, skeg and for the stern, so that if these are gotten out carefully and the boat set up correctly as shown, the moulds, if they are made to correspond with the details for them, will give the correct sheer and general shape of the boat.

The first step, of course, is to make a list of the lumber necessary and get this to the place where the boat is to be built. The list of material for all except the planking is very easily made out. For this get about 200 feet of white cedar. This is a great plenty, but if a plank splits or breaks it saves a few days' wait for more lumber.

In picking out this cedar select narrow boards, somewhere around 6 inches wide and as crooked as possible, for a wide boat of this type is quite a different proposition to plank than the ordinary narrow knockabout or launch.

One of the first things to do after getting the lumber, is to make a mould to bend the frames. The shape can be placed about an inch and a quarter away from the





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head—making a much sharper turn, about 2 inches, and the heel about an inch. This will give more bend to the timbers than is necessary; after they are cold they may be straightened but it is impossible to get any more bend in them. Placing two pieces shaped as directed above about 18 inches apart, nail some 1 by 1½-inch yellow pine or other strong wood across. These should be placed quite closely together around the turn, but after you get past the worst part of the bend they may be made wider and placed further apart. The outside corners should be rounded off, as this very often is what starts a frame to crack.

Then there should be pieces fastened to the sides and mortised for the cross pieces at the head, which should be placed about an inch and a quarter away from the mould so that the frames are easily slipped in. This job should be very strongly done, as no one who has not bent frames in this manner realizes the severe strain placed on the mould.

The frames should then be bent—making enough to have several over in case any break—and when the time comes to use them they will be set good and hard. The deck beams should also be bent at this stage. These may be bent on the floor by nailing blocks down and fastening the frames at one end, bending them around and fastening the other end. Like the frames, these should be bent more than is necessary for the same reason.

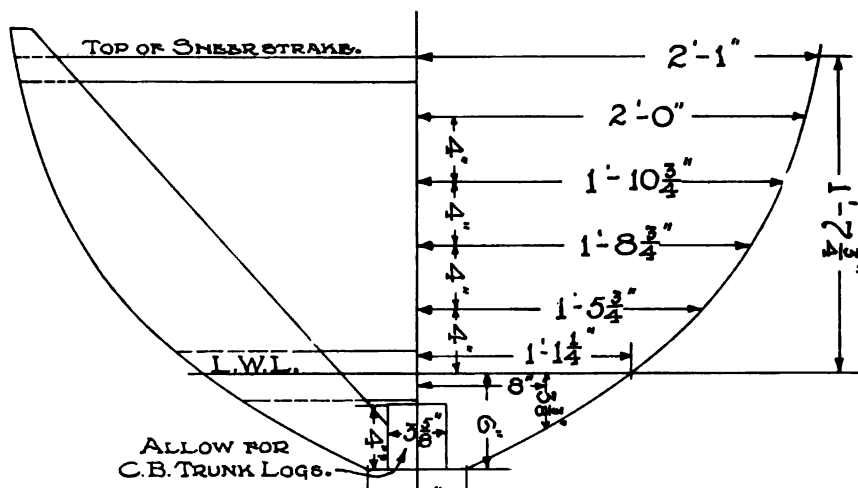
With this work done the builder can then proceed with keel, etc. The dimensions are given on the lines for the half siding of the keel. After the keel is cut out to the proper shape the position of the moulds (marked on the construction plan) and of the frames should be marked on its upper surface. The slot may then be marked and cut out.

The next step is to get out the centerboard trunk logs and the posts. The posts should fit very snugly and should be dovetailed into the keel. The trunk logs should then be riveted to the keel and to the posts.

The stem should then be gotten out (very careful dimensions have been given for this) and the bevels may be taken from the plans near enough to start, as they will have to be trimmed a little in fitting the ribbands and the planking.

When this is done the stem may be fastened to the keel. The next step is to get out the skeg (shown in detail) and the stern knee and rivet them to the keel, the last two rivets going through the skeg, keel and knee in one piece. These rivets are made from galvanized iron rod.

We are now ready to make the stocks. For this take



Mould No. 1

a spruce plank 6 inches wide and 1½ or 2 inches thick, and brace it securely to the floor. A 1-inch piece about 4 feet 6 inches long and 5 inches wide is then fastened on (shown in setting-up plan) and a cross piece just aft of this and the two blocks shown forward fastened on.

The keel is then set on the stocks—the skeg resting on the floor—and fastened to it with two ½-inch lag-screws 4 inches long with pieces of wood across the centerboard trunk logs with holes in them to act as washers. In this manner the keel is drawn down to shape and held there until the boat has enough planking on to keep it from straightening out.

The next step is to get out the moulds and the stern-board. One-inch spruce or white pine will serve for the moulds. These should be gotten out carefully. The dimensions given are so figured that it is not necessary to bevel the moulds and the ribbands will touch the edges of them.

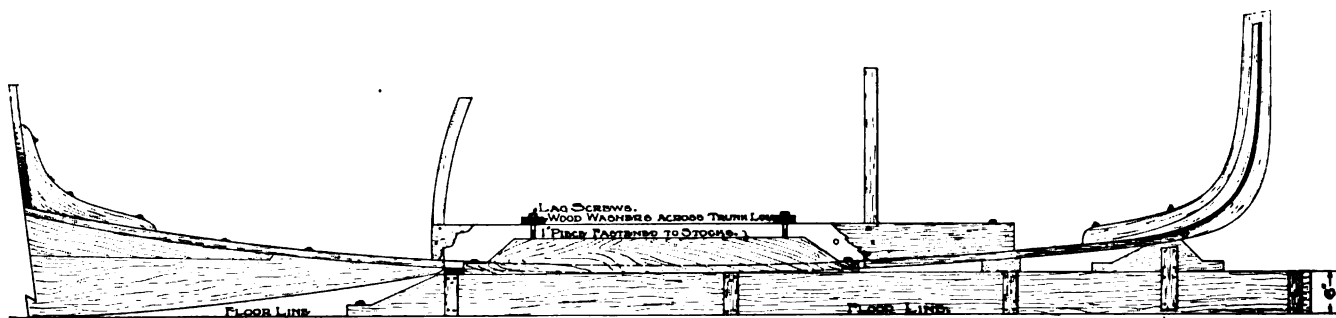
The sternboard is of oak 1 inch thick, 18 inches wide, and should be left wide enough at the top to cover the sheer-strake. In other words the sternboard fits up in the notch shown in the drawings, and the plank-sheer ends against the sternboard.

Then fasten the moulds securely to the keel, and, making sure that they are plumb and true, about half-way out nail braces down to the floor.

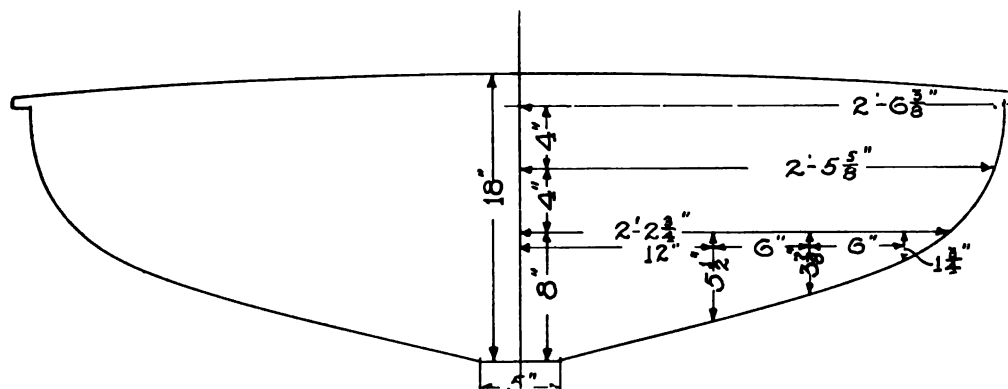
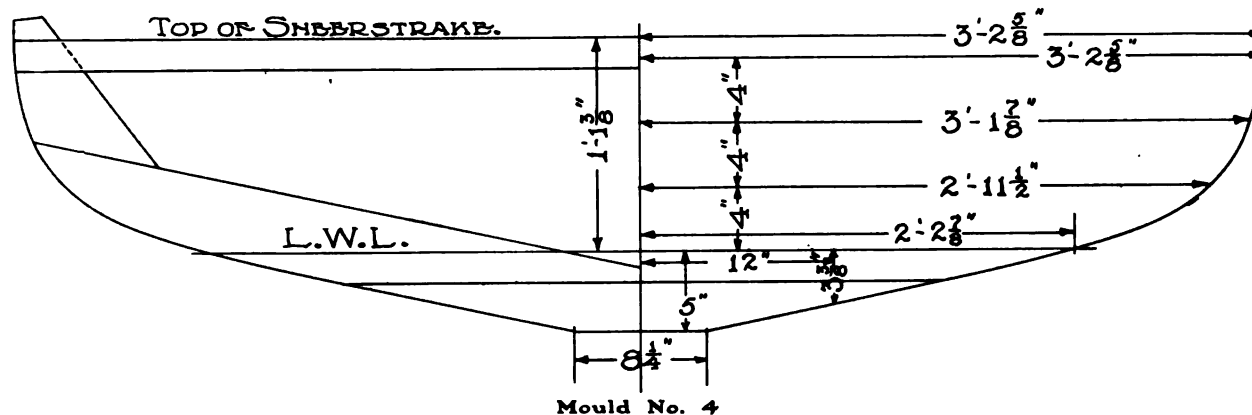
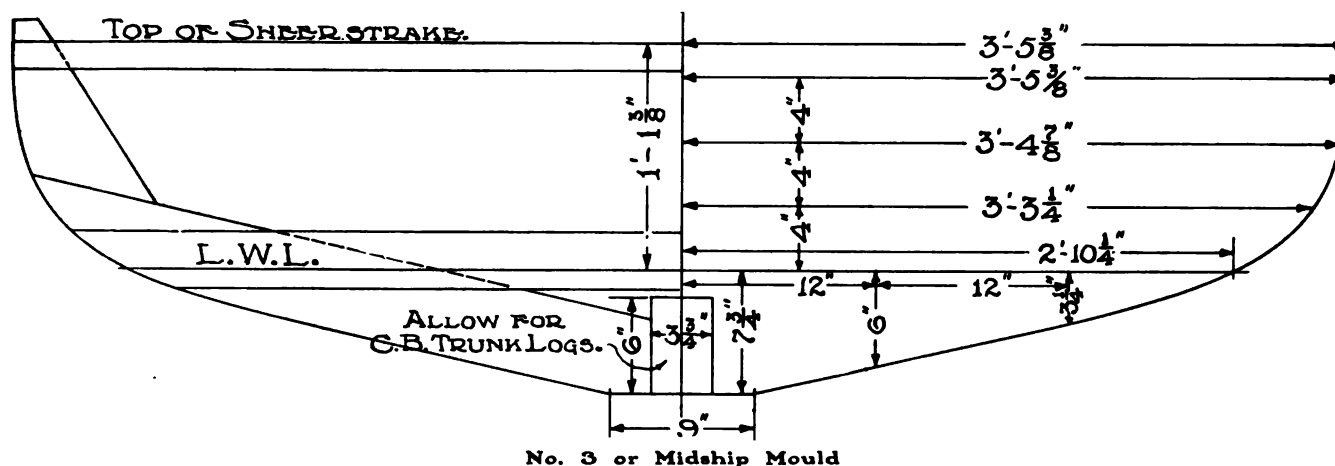
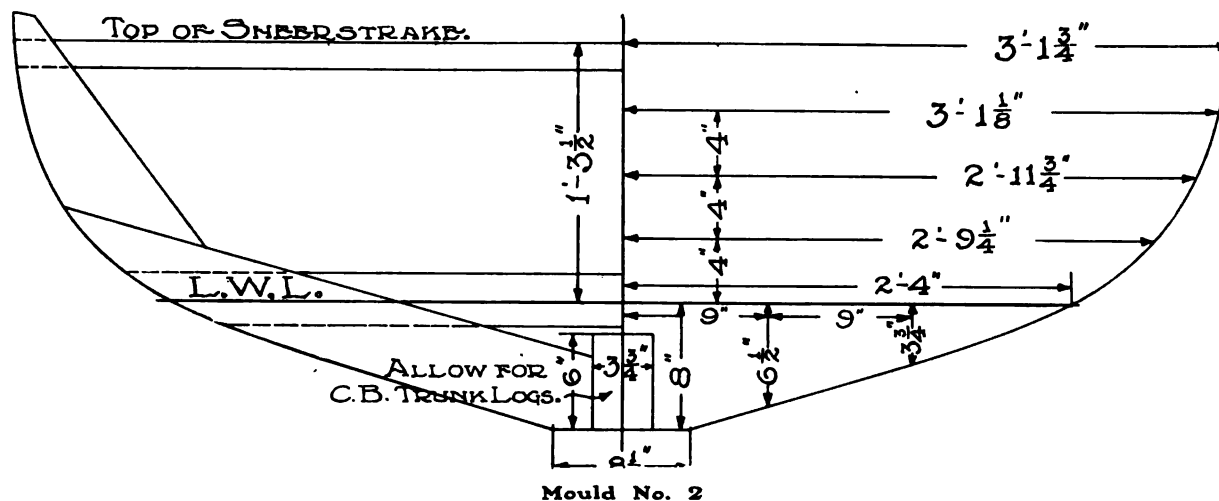
The sternboard is then fastened on. This is done with screw bolts, with the heads countersunk in the sternboard, and set up on the inside against the knee.

The stem and sternboard are then trued up and braced, where possible, to the ceiling, as this allows a clear working space around the boat.

Next take two pieces of spruce 1 inch by 1½ inch and bend them around the head of the moulds with the top-

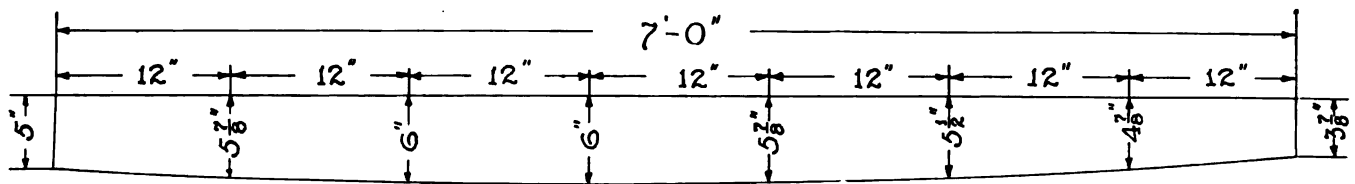


Backbone of Sea Gull Set Up Ready to Place Moulds



Moulds Number 2 3 and 4, and Transom Detail. Make Allowance for Bevel on Transom

THE RUDDER

CENTRE BOARD TRUNK LOGS - $1\frac{1}{4}$ " THICK.

Detail of Centerboard Trunk Logs

edge even with the cross piece, which, if put on according to the drawings, is at a height where the top of the sheer-strake comes. The moulds are then squared with a center line stretched from stem to stern and a nail driven through the ribband into each mould.

After this is done several 1 by 1-inch ribbands may be bent around, dividing up the mould so as to take care of the curve of the bilge and the straight floor when the frames are tried in.

If the frames have been bent as directed in the early part of the article, they should fit all along up to the three sawn frames in the extreme bow. It may, of course, be necessary to straighten them out a little here and there, but this is easily done.

The frames are fastened to the keel with one screw and a nail in the heel of each, the screw being kept out near the side of the keel. In the way of the centerboard trunk there is a $\frac{3}{4}$ by 3-inch oak piece with the lower edge curved exactly like the trunk logs and notched out to fit over the heels of the frames.

The three sawn frames forward are then cut out and fitted. These are screwed into the side of the stem, and floors fitted and screwed down into the stem.

The next job on hand is to get out the binder, as the plank below the sheer-strake is called. Allowance should be made for the width of the sheer-strake and for its taper forward and aft. The binder should be about $3\frac{1}{2}$ inches wide amidships tapered to about $1\frac{1}{2}$ inch forward and 2 inches aft. The remaining distance on the moulds should then be divided up, making each plank, as you work down toward the keel, a little wider than the last. The garboard should be about 7 inches wide amidships and as nearly 6 inches forward and aft as it is possible to make it. These divisions should also be made on the stem and sternboard.

When the binder and the plank below are on, the sheer-strake is then bent around and riveted to the heads of the frames.

Then after putting a few more planks on, enough to

carry down to the turn of the bilge, you may let the rest go for a while and get in the floors aft of the centerboard trunk. With the good fastenings in the heels of the frames it is hardly necessary to carry the floors down and fasten them to the keel. The floors are quite deep (see construction plan), and if you can get three good fastenings through each frame it should be sufficient.

The floors abreast of the centerboard are set on top of the frames, notched over the piece covering the heels and rest about a quarter of an inch on the trunk logs. Before these are put in the next plank above the trunk logs had better be put on and riveted to the posts and short dowels run through them down into the bed-pieces.

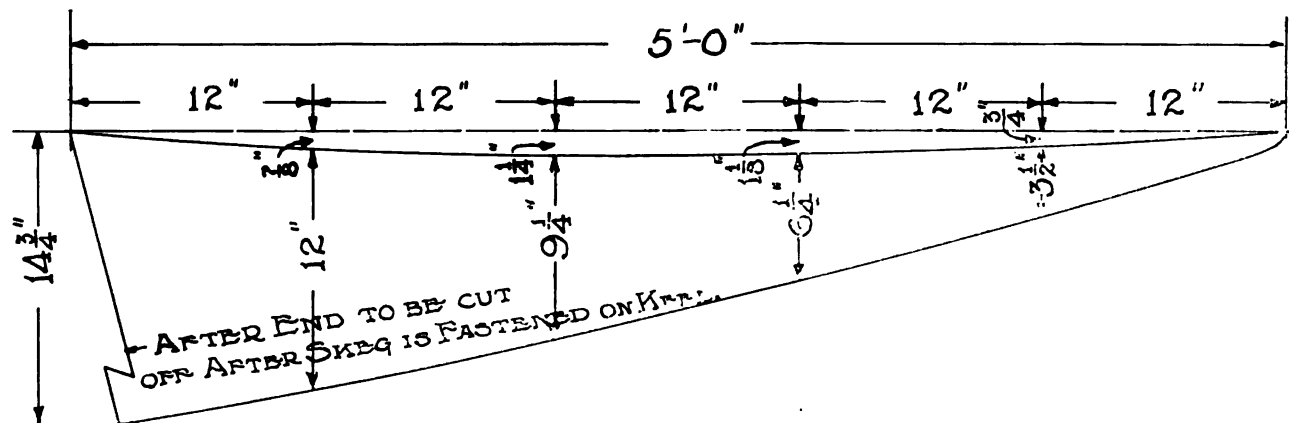
The mast step should be put in next. This is yellow pine or oak 2 inches thick and not less than 6 inches wide. When the position of the mast has been marked on it, cut out a slot a full inch wide and about 5 inches long. This length will allow for putting in a wedge if the hole is a little too far forward or aft. The step should have a rivet through it just forward of this hole, and with two lag-screws just aft of it into the floor of the frame will prevent it from splitting. A couple of good nails forward into the stem and two into the floor between the stern and centerboard trunk and two more into the trunk logs themselves and with the aft end of the step notched over the centerboard trunk this should never move.

The breast-hook and knees fastening the sternboard and sides together should then be put in.

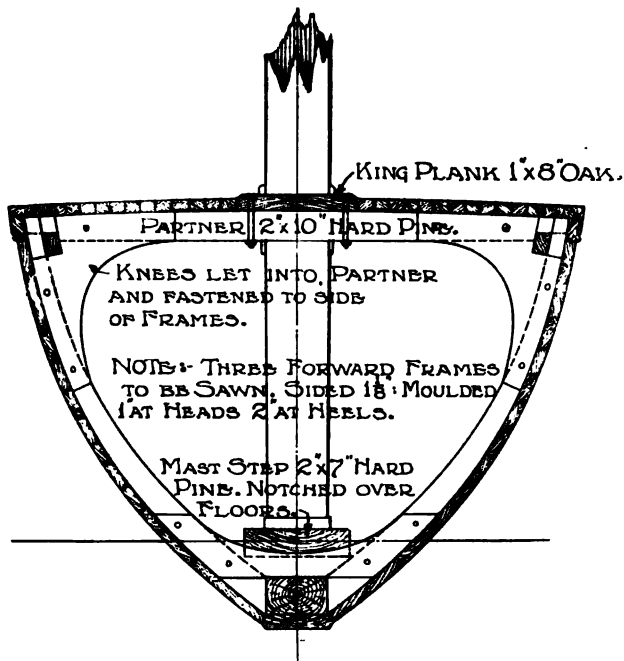
There may be some difficulty in getting a knee for the breast-hook, and if it is not possible to get one it may be made with two pieces of oak riveted together. This should be riveted to the stem and fastened to the sheer-strake with screw bolts. The stern knee may be riveted. The clamp is then put in. This is of spruce 1 inch by $1\frac{1}{2}$ inch, and is riveted through the planking and frames.

Now put a good brace across, say, every other frame or every third one, and the boat may be removed from the stocks and turned over to finish planking.

Spilings will have to be taken for the rest of the plank-



Detail Plan of Skag. See Constructional Plan for Thickness



Section at Mast, Showing Scantling Dimensions

ing, and so many articles have been written on this subject in former issues that it seems superfluous to write more on the subject.

A steam box will be found necessary to bend the garboard and first and second plank and also the shutter.

When the planking is all on the boat is again turned upright and placed on a couple of horses and the riveting finished.

The deck beams are then put in. Starting forward, the mast partner is fitted and the knees from this to the frames are put in and fastened. The other deck beams are put in up to the forward end of the cockpit. Then the deck beam aft is put in. The beams with the knees under are then put in and the deck stringers are then put in and riveted. The rest of the deck beams are then put in and nailed to the clamp and one nail through the head of the frames.

The king-plank is then put on and this is fastened through the breast-hook, mast partner and the heavy beam at the forward end of cockpit with screw bolts. The other beams are riveted, the heads of all being countersunk in the king-plank and plugged.

The deck is the next thing to be put on. The easiest and best way is to make a T-square with a block on either end of the T so that the ends just touch and the middle is free, then with holes at the proper distance marks can be made on the deck beams and the deck plank, starting from the inside and working out. In this way it is much easier to bend up to the next one instead of pulling. This will also be found an advantage in bending around the plank-sheer. The deck is blind-nailed into the deck beams and the plank-sheer to the sheer-strake with screws countersunk.

The coaming is then bent around and fastened to the deck stringer and deck. This will probably have to be made in three pieces, one around the forward bend and two short pieces aft. At the joint screw a block into which an oarlock may be fitted.

The floor boards are then put in. There is one section on either side of the centerboard and one aft which should be made so as to lift out.

The boat should then be given a good coat of paint inside and out, and after this is thoroughly dried the seams should be calked and the seams and nail-holes puttied.

The centerboard and rudder are yet to be done. The shape of both are given on the plans.

The centerboard had best be made of yellow pine in narrow planks, and the way to bore for the dowels is to plane up both edges and lay all together on a flat surface, then with a straight edge mark across where the dowels are to go; each board may then be taken and the line squared across the edges, and it is then bored from both sides. This is the safest way.

The same process is repeated for the rudder. The fittings for the rudder are described in the plans and need no further explanation.

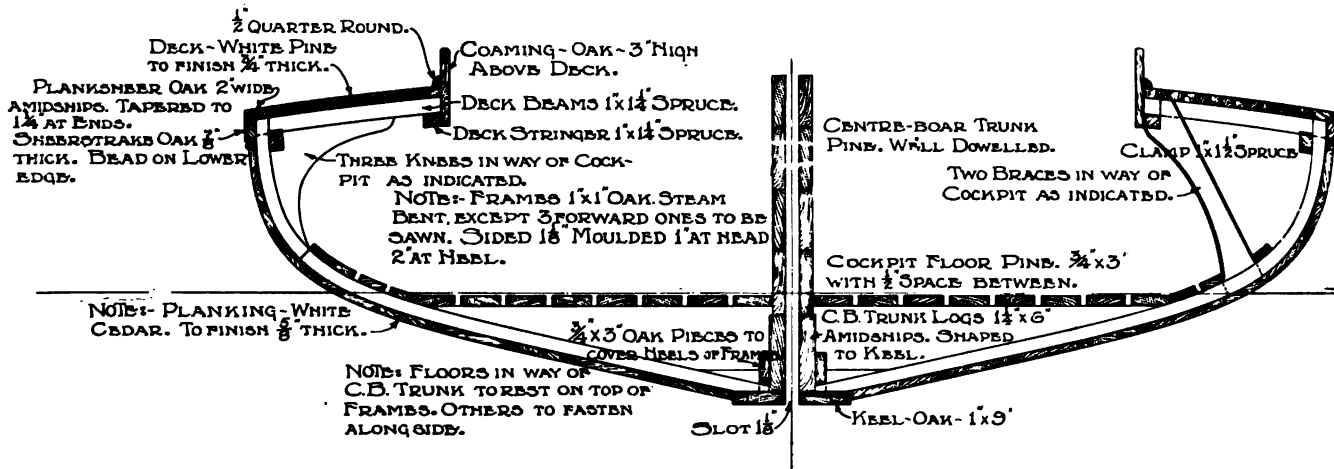
The water-line is then marked on the boat and the hull is ready for the final coats of paint and varnish.

The spars and rigging are all that remain to be done. The dimensions for the spars are given on the sail plan. The mast should be that part of the tree with the heart in the center. This makes a better, more springy mast, and one less likely to break than any other. The boom and gaff may be made of clear stuff.

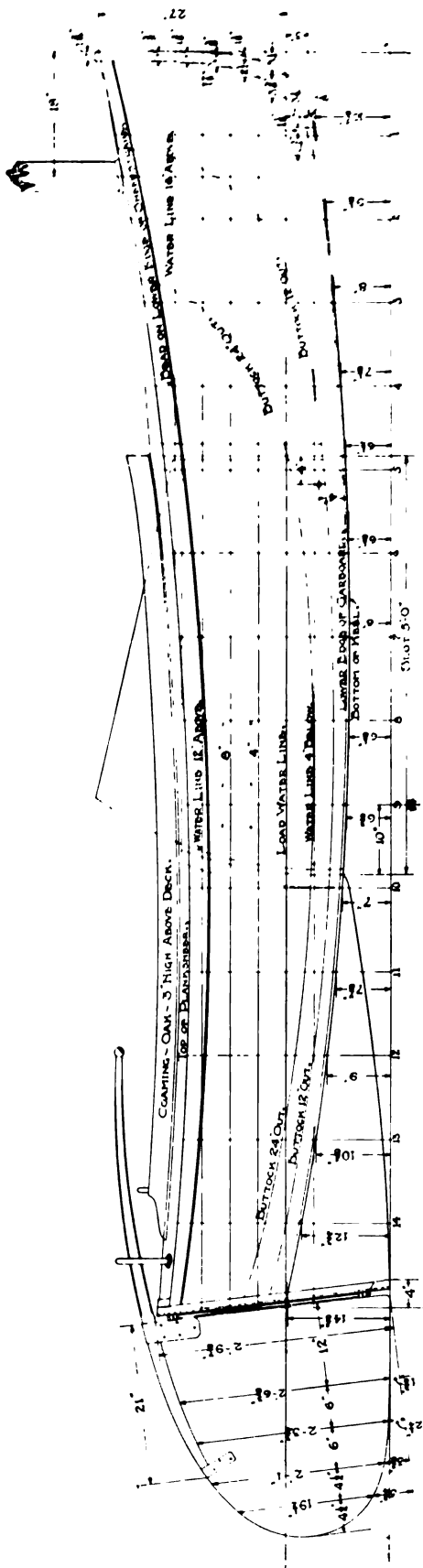
The headstay is $\frac{1}{4}$ -inch diameter plough-steel wire and all the running is $\frac{3}{8}$ -inch diameter best Plymouth manila bolt rope.

The blocks may be galvanized iron, bronze or wood, to suit the owner's taste.

The sail should be of the shape as shown and of

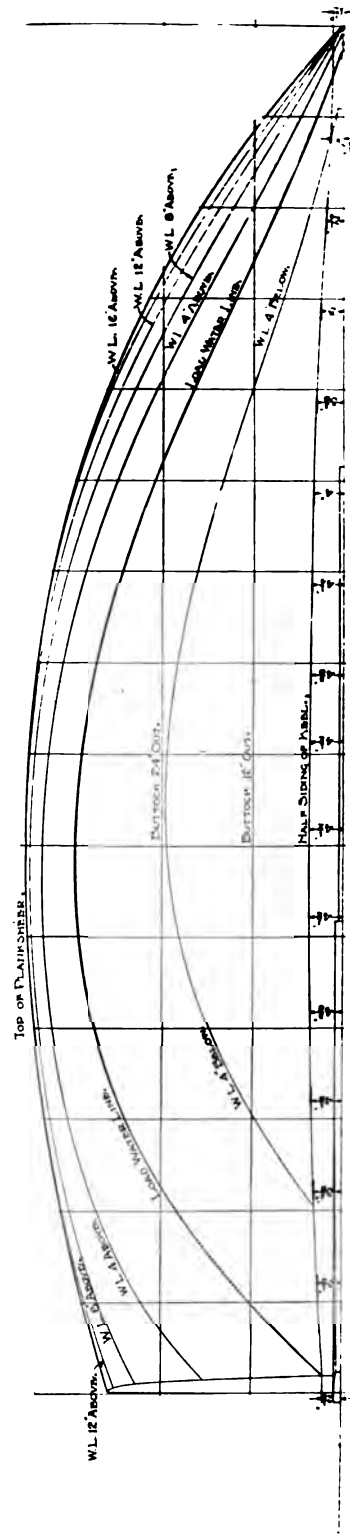


Midship Section Showing Full Constructional Details

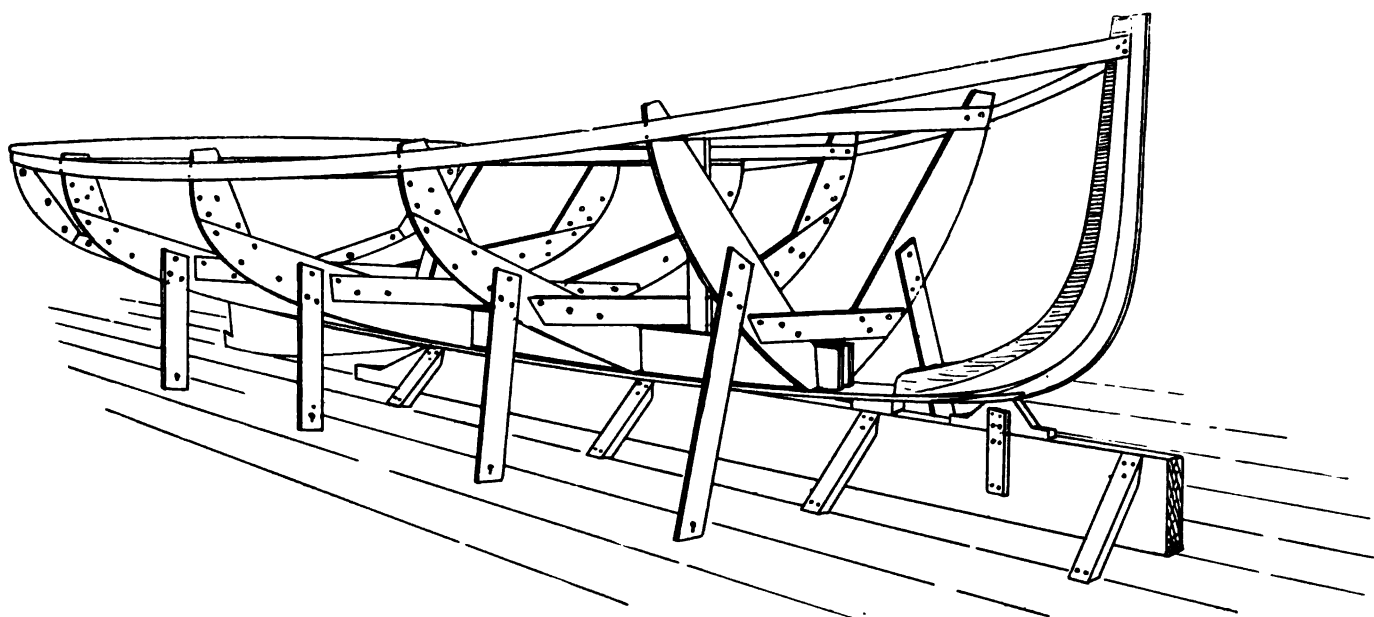


DIMENSIONS:-

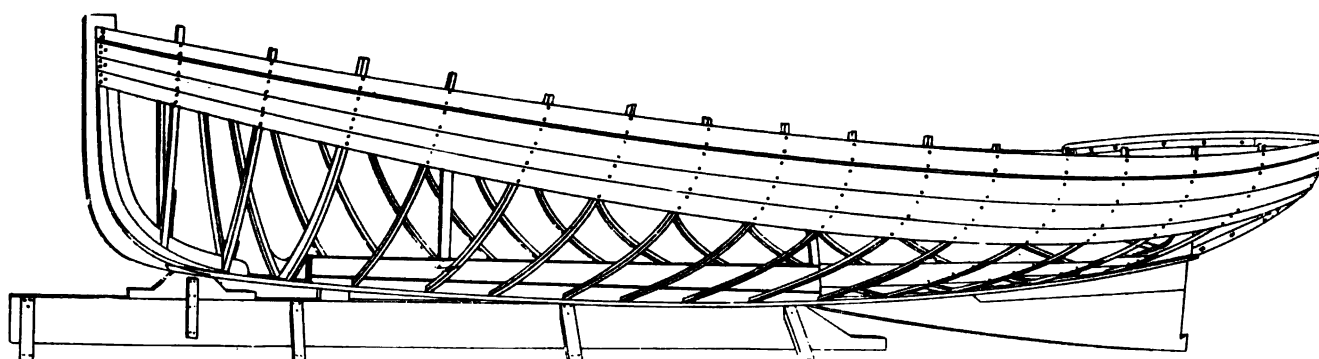
LENGTH-OVER ALL.	15'-0"
LENGTH-L.W.L.	14'-6 $\frac{1}{2}$ "
BEAM-EXTREME.	7'-0"
BEAM~W.L.	5'-11"
DRAFT~EXTREME.	1'-3"
DRAFT~HULL.	0'-9"



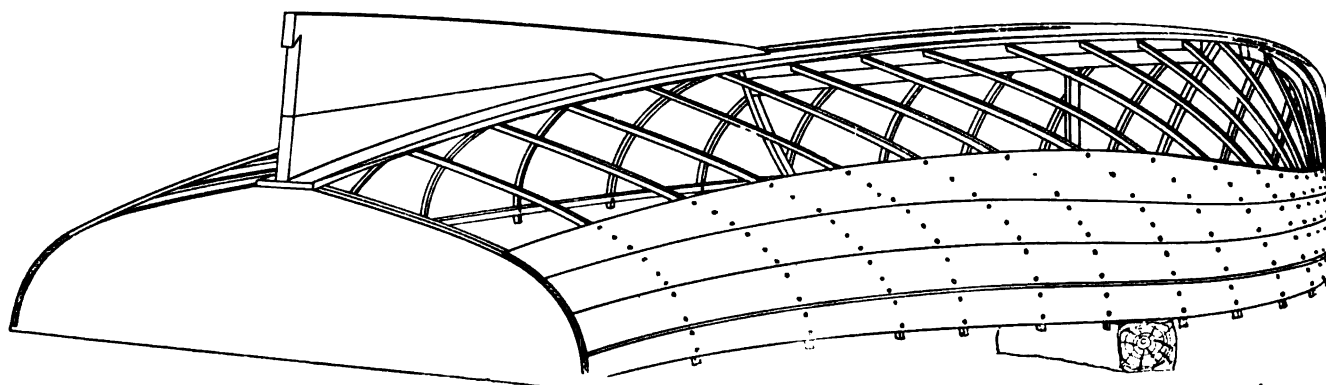
Lines of the Fifteen-Foot Catboat, Sea Gull



The Moulds in Place Ready for Ribbands. After This the Frames are Placed in Position and Fastened



All Framed Up and Half Planked. Ready for Turning Over



Turned Over Ready to Finish Planking

course the material will suit the owner's inclination, also his pocketbook.

The boats described above should prove to be safe, comfortable little craft for afternoon sailing, and a one-

design class of them should furnish excellent racing, if they prove as fast as the designer calculates, besides having sufficient accommodation for taking out small parties for afternoon sailing and short day cruises.

A STRETCH OFF THE LAND

John W. Ward

THERE is nothing so fascinating in the whole world as a real cruise; not a mere week-end trip taken for health's sake, but a port-to-port run at leisure. There is such a charming uncertainty in the anticipation and in the trip itself. There is nothing of the personally-conducted tour about it; there can be no settled program. The yachtsman knows (more or less) where he wants to go; he knows (exactly) how the tides run; but he does not know at all how the wind will favor him. That is why, if he is an old hand, he just gets underway and sails. He makes a port if he can, or else brings up under the lee of something for the night. If neither is possible, he rides things out with plenty of sea-room. The wind never blows quite the same for two days running; so the cruising man never knows what the next day will bring him. The charm is all the greater when the yachtsman forsakes his home waters, his familiar cruising ground, every shoal and deep of which he knows, to go farther afield and shove his boat through strange seas.

Seamen furrow all the seven seas because they must; the yachtsman does it because something calls him to it. Both find a peculiar appeal in strange waters where everything is new, where their own seaman's instinct counts for everything, and the experience of their predecessors is of very little use. When the owner brings his own mooring buoy on deck again he cannot help a naïve feel-

ing of having gained a victory, of having bested something, of having survived the test of primeval conditions; an involuntary feeling, never admitted, but which nevertheless exists. It matters very little really whether the coast is kept abeam or dropped; it is the fascination of the unfamiliar, the unknown, which dominates everything else. Both are good; on a passage there are two moments always unforgettable—when the horizon masks the land astern, and when the landfall looms up beyond the bowsprit end. And in between, a sense of loneliness.

Yet no one who has ever cruised would ask a better sport on earth. The keen tussle of the daytime with wind and tide; the new strange port at night, when the day's meal is cooked and eaten, and the hour or two of ruminative slackness before turning in, are all freshly delightful day after day. A harbor is a meeting-place for all the world; where seamen of all nations meet and pass the time of day and exchange the small talk of the high seas, and though they go on business they are open-minded men and not above discussing the way they have come and the ways they have to go with every one they meet. Each yachtsman in his own degree (each real yachtsman, that is) is a man and their brother, sailing their own courses and taking their own risks, whether he ventures round a headland in a half-decked boat or makes an ocean passage in a schooner.



View of Venice. Start of the Venice-Rome Cruise

Everybody knows that there is the real sport of yachting, smelling your own way, in your own boat, by yourself. There is nothing else. Scuffling round a course with a half-dozen of your equals, luffing and being luffed, taking room and giving it, is fine, too; but a polo pony is as good and better than a yacht for that game any day. But real yachting is cruising, exploration afloat; and they know it, every one of them, big and small alike. The old-time merchant venturers were only cruising men, when all is said and done; they went for loot, it is true; they also went to see new ports; but most of all they went to see things for themselves. It has been that way ever since the winds first blew, and always will be till the seas dry out.

Sooner or later all classes of yachtsmen come to it. Sail and steam and power, they all end up there inevitably. The power men, though, have been the hardest to convert; they started to seek their sport in racing; six times up-and-down and round the buoy and finish. Yet one by one they dropped it; hulls won, engines won the races, but the man was eliminated altogether. He had to get the boat round certain buoys in a certain way, but could have steered a car round a track much better and with less discomfort. At last, when the power men pure and simple had been eliminated (the sea can eliminate in other ways than drowning) the reaction came. First of all—and almost simultaneously—in Britain and Scandinavia; pottering round a course could never still the cravings of the children of the Vikings. So the cruising event came into being, a run from port to port in open water, wherein the boat was merely the vehicle and the sport was in the passage—in laying a course from mark to mark, avoiding the dangers in the waters and bringing the boat to the home port safe on time.

Little by little the idea developed and extended; the ocean race came into being—long-distance events like those from New York to Bermuda, Philadelphia to Habana, and similar fixtures taking place regularly all over the world. The length of course minimized the handicapping evil; navigation and seamanship counted for more than racing skill, and the victory went regularly to the best combination of boat and man. In Europe such events are becoming more popular year by year, such trips as those from Stockholm to Goteborg, the run down the Danube, from London to Cowes, from Dover to Brussels last year, have been uniformly successful; more, they have tended to deliver power yachting from the sphere of mechanics and elevate it to a real sport. Little by little the sporting legislation has fallen into the hands of cruising men who know what the sea is and how such contests must be regulated.

There are no men quite so conservative of ideas as sailors—real sailormen or play-time sailors; and the strongest opposition to such long-distance events came from hard and crusted cruising men. Not only where power yacht matches were concerned, but also against races exclusively reserved for sail yachts. When Mr. Thomas Fleming Day (who with his American magazine *THE RUDDER* has done more for cruising yachting than any man alive) first announced his intention of starting a race from off New York to Bermuda, a universal howl of derision rose from the seaboard of every State in the Union—till the first race was run; then the strongest opponents (commodores and officers of the Rocking Chair fleet especially) sang very small indeed. This race has become an annual event, and served to induce men in

all parts of the world to organize similar fixtures; every one of which up to now has been successful.

The year 1911 will see the most ambitious event of the kind ever projected. The Italian Touring Club, like every other sporting organization in Italy, has drafted unusually important fixtures for next Summer, when the country is celebrating the fiftieth year's existence of a "united Italy." The main portion of the program is a cruise from Turin to Rome via Venice; races are put on at intervals to satisfy the cravings of those who lust for plunder, but the cruise is the main thing. Naturally enough, it will be run off in stages, the total distance from start to finish being far too great to induce men to make a passage of it. From Turin, on some suitable date in the month of June, the smaller boats will start by running down to Venice, passing through Pavia, Piacenza and Mantua; the whole distance to Venice being covered in seven stages. The very smallest boats are run from Turin to Pavia only. This early portion of the trip will also be covered by such small fry as rowing boats and cruising canoes.

The serious part of the event starts at Venice, where the seagoing cruisers join the fleet. The run will go right down the shores of the Adriatic, bringing up at such spots as Ravenna, Rimini, Ancona, Castellamare, Pescara and Vasto; every one of them worth a visit from some point of view, maritime or otherwise. Finally, after the port of Bari, the boats will run through the Straits of Messina and up to Naples, where a longer stay is made than at other ports. Naples, too, will be the starting point for the sailing yachts, for which races will be given over a course from Naples to Anzio. The last stage of the cruise is from Anzio to Rome, the actual finish being off the castle of San Angelo.

The organization of the whole race has been placed in the hands of the executive committee of the Touring Club Italiano, the headquarters of which are in Milan. In view of such disastrous events in the past as the Alger-Toulon race, in which not one single starter finished the course (though there was no loss of life, happily), the committee have very wisely drawn up fairly stringent conditions affecting points of design, construction and equipment. The principal rules provide that boats must not be less than thirty feet in length, must be decked for two-thirds of their gunwale area, must be capable of maintaining a cruising speed of eight nautical miles per hour, and must be able to store fuel for a two-hundred and fifty-mile run at least. The most important rule of all provides that boats shall be unsinkable under ordinary cruising conditions, this being effected by a suitable number of efficient water-tight bulkheads. The boats, also, will be required to run in proper cruising trim, with all the accessories and instruments usually considered necessary on board. The trip from Venice to Anzio is about two thousand five hundred kilometres of open (or practically open) water; the restrictions imposed by the committee are therefore not only quite reasonable with a view to minimize danger to the competing boats, but even more reasonable still when it is remembered that one of the main objects of the cruise is to encourage the building of wholesome types of bona-fide seagoing cruising yachts in Italy.

The length of the course makes this cruise the most important of its kind ever held; the prize list, too, is of a character likely to attract owners from all parts of the world. A central prize fund of 100,000 lire has already been secured, in addition to many valuable cups and

trophies for special events; besides this local committees have been formed which, each of them, are collecting their own prize funds; such committees have already been constituted at Venice, Rimini, Castellamare, Pescara, Bari and Naples; and each of them will put up special prizes (and entertainment funds) for the fleet.

Quite apart from the mere cruising interest the cruise is of the greatest importance in the world of sport. The Swedish Automobile Club has decided that the next race for the International Motor Yacht Trophy (which it holds at present) shall be run off in Italian waters after the Turin-Rome cruise has finished. Ten boats have already entered from Sweden alone for both events; Prince Scipione Borghese has entered a boat, as has also the Duke of Westminster, while others are promised from the Nautical Section of the Touring Club de France, from the Union de Yachtsmen de Cannes, the Fédération Belge d'Aviron, and from Monsieur Albert Glandaz, who more than any one else has contributed to the extension of cruising sport in France. The English Clubs, too, have not been behindhand in according their support to the Italian Touring Club; two of our premier clubs—the Royal Victoria Yacht Club and the Royal Motor Yacht Club—having allied themselves to the organizing body.

Taken all round, it will be no ordinary trip; the river parts are easy enough for any one, but the long coastal trip down the Adriatic, through the Straits of Messina and up the Tyrrhenian Sea to Naples will be extremely

interesting to any keen yachtsman, both as to the navigation and the novelty of the ports put into. The navigation will certainly be tricky enough to satisfy any one. It is to be hoped that the Italian Touring Club will secure good international support for their cruise, not only on account of its intrinsic interest, but also that it may encourage them to persevere in certain good works they are carrying out for the benefit of yachtsmen of all nations; latterly, they have instituted an open competition for a system of marking rivers; they have also drawn up rules for designing competitions for cruising boats of various kinds, and in the future they will issue very valuable handbooks relative to the Italian waters, inland as well as coastal. This, together with the probable revival of the Mediterranean regattas, now that the International Yacht Racing and Rating Rules are in full operation, will tend to an influx of yachtsmen from different countries who will greatly benefit by the work done and experience gained by the Touring Club Italiano. There is ample room for some international cruising association; as it is, most men who go afloat have to gather their experience as best they can, and although that is the best part of the game there is still plenty of opportunity and plenty of scope for associations which will look after the interests of the cruising man and—if they serve no more useful purpose—which will at least be able to give him some reliable information as to the rudiments of the game as practiced in their own countries.—*Travel & Exploration.*

DRY BATTERIES

A. L. Brennan, Jr.

DRY cells are self-contained units of power and, being a chemical and mechanical combination, it is not surprising that their generating capacity is limited under certain conditions. It is an unquestionable fact that the dry cell is the most abused "auxiliary" of the modern internal-combustion engine, and this can in nine cases out of ten be traced to the ignorance of those entrusted with the handling of gas engines.

An engineer once said to me, "Up to a short time ago a set of six cells would last me almost indefinitely, but since I cleaned the contact points on the coils the battery seems to run right out. Do you suppose I exposed too much surface on the points and the current escapes?" I replied that I had never heard of current escaping in such a manner and that I would run down and look his engine over. I noticed at once that after he had cleaned the contact points he had screwed them down to get as much tension as possible, thinking he would get a better spark, and not knowing that he was using perhaps twenty times more current than necessary to get good results. I made plain his mistake to him and his battery troubles ceased.

This is a mistake a great many make in more or less degree, and it is of the utmost importance to remember to have as little tension on a coil as possible in conjunction with good results.

Always use the number of cells recommended by the maker of your coil—do not fool yourself into thinking you can get better results by using more, for the chances are, you are burning your coil up.

The only way you can get higher efficiency and longer life of dry cells is to use more than one set, or cells wired in "series multiple." In the first instance, the idle cells will have time to recuperate, which is very important. In the second instance, by wiring one, two, three, or four sets composed of four, five, or six cells each in "series multiple." In this manner the voltage equals four, five, or six cells, depending upon the number of cells in each set, while the amperate rate of current is increased to such an extent that the current consumed is reduced to a minimum.

Using small wires and switches and making poor contacts are also extremely detrimental to good service. No wire smaller than No. 14 should be used and larger sized wire is recommended. I am now speaking of the primary wiring. For the secondary current from the coil of course much heavier wiring will be necessary. Switches should have large contact surfaces which should be kept clean at all times. The importance of having contacts and connections firm, clean, and well protected is obvious.

Strips of leather are much better to secure wires than staples and will never cause an elusive short circuit.

Dry cells are often seriously affected by a change of temperature. At warm and hot temperatures dry cells show the highest amperate tests and the lowest at temperatures below the freezing point.

To secure the greatest efficiency from dry cells they must be kept dry at all times, together with the wiring and all other outside parts.

VIPER, AND THE BOATS THAT CAN BEAT HER

Albert Hickman

IN the December RUDDER there is a little article entitled, "Can Beat the Viper," and signed by the Elbridge Engine Company. It describes a 12-foot by 4-foot hydroplane, and the authors state that the things that hydroplane does to their Viper are enough to break the hearts of Viper's designers. Yet our hearts are not broken. For this there must be some explanation.

We have known for a long while that there were boats that could beat Viper, and were convinced that there were other people who knew it also; but so long as they consented to keep it dark we said nothing. Now, however, the secret is out and I see no reason why I may not rise and explain.

There are boats that can beat Viper, lots of 'em, and they are no good: without one single exception, so far as I can find out, they are no good. That is, they are no good as boats, which is what they are intended to be. In my first article on Viper in the March RUDDER I stated my belief that unless a boat was a sea-boat she was not a boat at all, and further, that a cedar nautilus shell was not a sea-boat. Neither is a 12-foot by 4-foot hydroplane that is light enough to plane while carrying a 178-lb engine and a man. A boat moves on the waters, and the waters are ruffled by the winds of heaven which are sent by Providence, and as no man knoweth the movements of Providence, so a boat must be prepared to

deal with the winds. Now no 12 by 4 hydroplane to my knowledge moves over the surface of ruffled waters at above 25 miles an hour without breaking itself into little bits, and certainly not one of the type illustrated; therefore, she is not a boat. On the other hand, the more we see of Viper the more fully are we convinced that she is the most amazing little sea-boat in the world. We have now made clear the primary difference. If this is a racer, Viper is a family launch.

Let us have a look at the boats that can beat Viper—with the same power—and include the Elbridge Company's flyer in the survey. In an engine company's advertisement we read: "You don't have to build a big hull to get speed if your motor is right."

This is a most misleading statement in its general sense. It would lead the unsuspecting novice to suppose that a big hull was an advantage as far as speed was concerned. On the other hand, in the hydroplane game, the small hull has all the advantage. It would have meant the same thing and been much more accurate if the advertisement had read: "You do have to build a small hull to get speed if your motor is wrong." That is common sense, always provided that the water remains smooth.

Now we shall proceed to show that, in spite of the small hull, the Elbridge Company's ship has not got any



Viper III at 20 Miles per Hour in Rough Water

Photos by Albert Hickman, Copyright 1910

speed. In fact, the first thing about her that impresses the reader is the leisurely manner in which she moves over the water. The demonstration is best made by comparing her with a well-known glider of similar size. Mr. Montagu Batting, of Teddington-on-Thames, has a 13-footer called K. N. K. N. is fitted with a Laurin-Klement engine of 15-h.p., and this little glider makes 27.63 miles an hour. Where is the Elbridge Company's 25½ miles with 30-h.p. beside this? Mr. Batting has also a 15-foot glider named Flapper that makes 41 knots or about 46 miles an hour. Her engine, I believe, is rated at something over 40-h.p. There are a number of other small gliders in England ranging in length from 12 to 15 feet and in power from 12 to 15-h.p. and making from 23 to 26 miles per hour. And in France there are a group of 10 and 12-footers that would make the Elbridge skimmer look like a stone barge at anchor. By comparison with such facts as the above it is evident that there must be something seriously wrong either with this hydroplane's hull or the engine. To me the amazement would seem to be in accounting for the disappearance of

the 30-h.p. Mr. Day says that "self-deceit is a disease with men whenever it comes to attempting to ascertain the speed of any moving vehicle or object." It would seem possible that the hydro's owners might have deceived themselves as to the speed of this boat and that she is really traveling much faster than 25½ miles. Otherwise the best we can say for her is that she is painfully slow.

Having compared the Elbridge boat with the boats that can beat Viper, suppose we now compare the boats that can beat Viper with Viper herself. The weights of the English 13 and 14-footers run along at from 450 to 550 lb, including hull, engine and everything complete, and some of the little French 'planes are much lighter. The hydro's owners gave no details of their boat, but the hull, with attachments, should not weigh more than 250 lb. With a 178-lb engine this brings the total weight up to 428 lb.

Viper III, a 20-foot Viper, with which size the Elbridge Company is doubtless making its comparisons, has an 8-inch by 1-inch yellow birch keel; 2-inch by 1-inch white oak floors spaced 12 inches on centers, 45 natural crook hackmatack knees, 2½ inches at the throat



Viper III at 20 Miles in a Seaway with 17-H.P Engine



At 20 Miles in Rough Water



Five Men and a Dog—with Room for Two More

by $\frac{3}{4}$ inch thick and extending to gunwale; $2\frac{1}{4}$ -inch birch stringers, and she is planked and decked in $\frac{1}{2}$ -inch cypress, is brass bolted throughout, her bottom copper riveted, and her sides and decks fastened with brass screws. That is to say, she is built like a Norman church, and her weight is probably twice that of the Elbridge craft. Her engine, instead of being a 30-h.p. racing machine weighing 178 lb, is a 17-h.p. medium-weight outfit that does not pretend to be a racing machine, a three-cylinder engine $4\frac{1}{4}$ inches by $4\frac{1}{4}$ inches, which weighs 371 lb, or just 400 lb with the magneto. In racing trim and with one man aboard Viper's weight is a little over half a ton. Turning a two-blade 17-inch by 24-inch Harthan propeller from 1,040 to 1,050 r.p.m., she has shown a mean time over the measured mile of 2 minutes 53 seconds, or nearly 21 miles an hour.

Comparisons are now becoming odious, but we will continue. From the time Viper III went in the water we have deliberately put her through every piece of bad weather we could find. At the time of the Trask Cup Race in St. John it blew all the time and sometimes hard. In the worst Northeaster of the season Mr. Wetmore and I took her down across the Kennebecasis to be measured, running fair in the trough of the sea, and came up at full speed through Grand Bay at five o'clock that afternoon, through the prize rain-squall of the day. Outside of a tide-rip, Grand Bay can produce one of the most notable chops I have seen. These were among the finest short sails I have ever had. It was like riding a comet through a waterspout, and I should like to have seen the Elbridge ship, or any other of the animated tea-trays, as they call them in England, in operation at 25 miles alongside. The things that Viper would have done to those boats, or rather, the things that the crew of Viper would have watched Providence doing to those boats, would have turned their designers gray with terror. One descent out of the empyrean on to the Grand Bay combers and they might spend the rest of the day dredging for splinters.

Besides these things, a tea-tray is not a family boat. It steers with some difficulty at speed, as the Elbridge Company has hinted, and you would hesitate to take your aunt to picnic in it. Let the Elbridge Company produce a photograph of the boat that can beat Viper proceeding through the ordinary harbor chop and bearing in comfort five men and a dog—with room for two more. But, the designer will say, that is not what she was designed for. Precisely. Nor, evidently, was she designed for a sea-boat. She was designed for speed in extremely smooth water, which, as we have shown, she failed to attain. Therefore she is no good, as we undertook to demonstrate. And therefore the hearts of Viper's designers are not broken. If the Elbridge Company will send us a few dollars and the exact dimensions and weight of their 30-h.p. engine, or better still, the engine itself, we will build them a 12-foot hull that will make the designer of their present 12-footer have a convulsion: that is, always provided that their engine will turn up as they advertise and will produce 30-h.p.

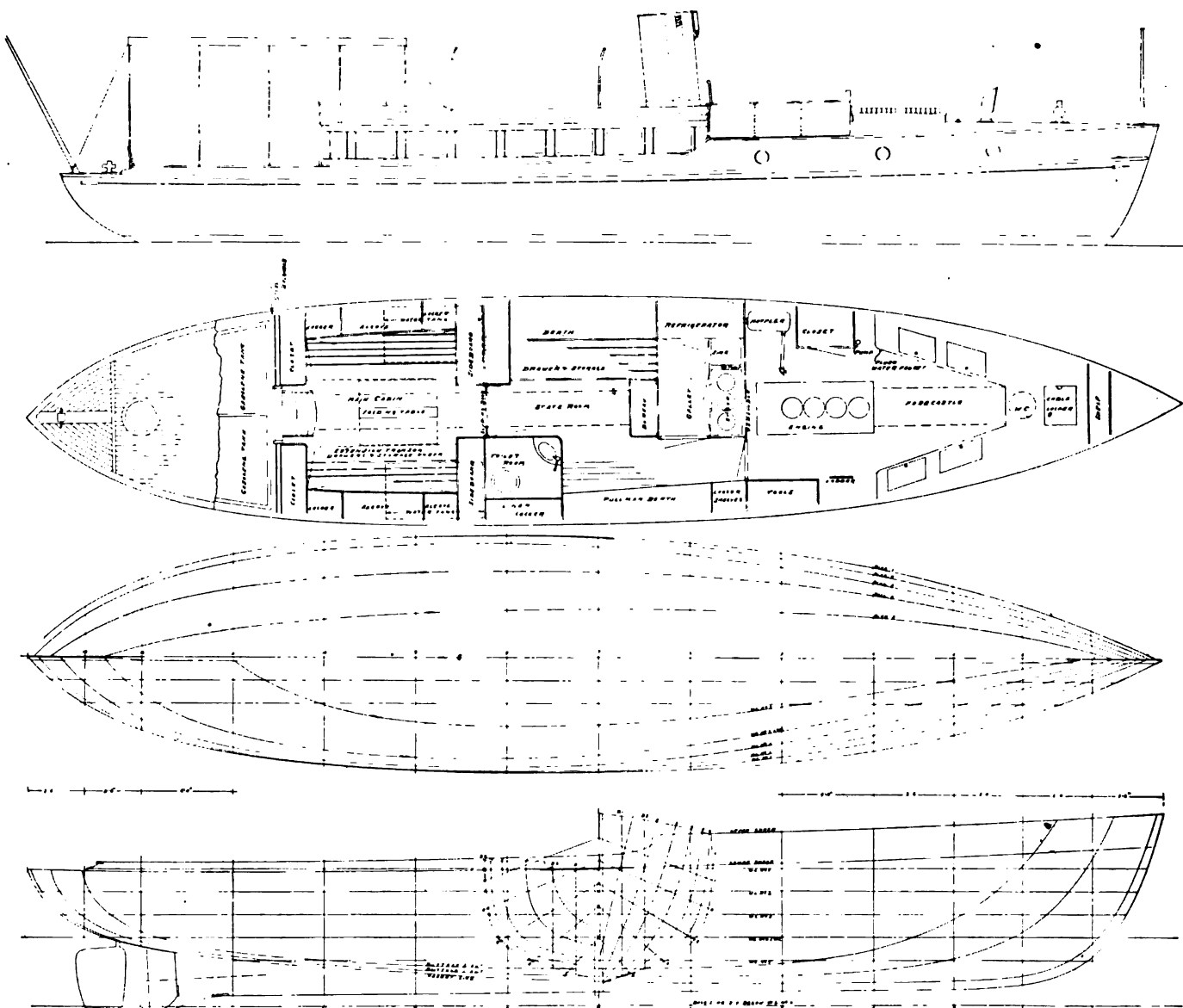
This little discussion has been useful, for it has served to suggest Viper's status among the small power boats, a thing which perhaps should have been done before. Twenty feet is about the shortest hull of conservative and seaworthy form that can be given sufficient bottom area to work to the best advantage with construction that is heavy enough to make the boat staunch, an engine

heavy enough to be reliable and a crew of one or two men, and still maintain comparatively high speed. She needs all her bottom area to do this, and may be said to occupy a position between the displacement boats and the hydroplanes, showing many of the advantages of both without necessitating the light weight of the hydroplanes. Her races with displacement boats have been farces. It is a farce to see her with a 17-h.p. two-stroke engine plugging along neck and neck with a light mahogany 32-foot runabout with a 40-h.p. American & British engine. The Trask Cup Race, of which there was some description in the December RUDDER, will serve as an example of how she works under the A. P. B. A. rule. Effie M. was a 32-foot racer of the narrow displacement type with a two-stroke engine rated by the rule at 42-h.p. Essex was a 22-footer, built after Mosquito, with a two-stroke engine rated at 21-h.p. Viper's engine rated at 17-h.p. Viper had 6 minutes 11 seconds time allowance over Effie M. and 6 seconds over Essex. She defeated Effie M. not only by this 6 minutes 11 seconds, but by 2 minutes 7 seconds boat for boat, beside, or about two-thirds of a mile. Including time allowance she defeated Effie M. 8 minutes 18 seconds in a $10\frac{1}{4}$ -mile race. Essex she defeated by 4 minutes 28 seconds. Effie M. was admittedly running slow, but the results leave very wide margins. Viper III was entirely new and was turning a 17-inch by 28-inch wheel 860 r.p.m. Now she is turning a 17-inch by 24-inch wheel 1,040 r.p.m. and getting much better speed. Besides, at the last she was instructed to carry an extra man, which is not her racing trim.

We have seen nothing to modify our original beliefs that at practical and seaworthy weights and with the powers employed, which are within the reach of every man, she is the fastest type of small power-boat hull yet devised.

It is worth comparing even with the two well-known and practical forms of hydroplane developed in England and France within the past two years. These specialized craft depend for their great relative efficiency on largely reducing their area of wetted surface at high speeds. To cause these boats to plane on these reduced surfaces requires, in a small boat of practical weight, say 50-h.p. or more. With smaller powers and in hulls of the weight of Viper, Viper will unquestionably show greater efficiency, will get greater speed than either of these types.

In concluding I should like to refer to the Elbridge Company's Viper that they can't make go a mile faster by trying all sorts of engines and propellers. If I were they I should attach a stout chain to its bow and sell it to a destroyer as a ship's brake, with instructions to make fast the end of the chain to the after bitts. If the destroyer seemed in danger of colliding with anything she could heave this invention overboard, and *Biff!* Viper not being able to go any faster, would stop, and the destroyer would stop too. To say that 22 miles seems to be the natural speed limit of any 20-foot flat-bottomed boat with a drop of $2\frac{3}{4}$ inches in her bottom, does not comport with the normal flow of human reason. Almost any old shape of box can be driven above 22 miles an hour, though she may not travel prettily. With a four-cylinder, two-stroke engine, $4\frac{1}{2}$ inches by 5 inches, we drove that ancient board pile, Viper II, above 25 miles an hour, though what the horse-power developed was, I am not prepared to say. Everything pointed to its not being over thirty.



Fifty-Foot Cruiser Octalee IV. Owned by M. W. Houck, New Rochelle, N. Y.

OCTALEE IV

OCTALEE IV was built for Mr. E. H. Tarbell of Boston, Mass., from plans and specifications based on his own personal experience gained owning and handling many power craft on the New England coast. Mr. Tarbell states that she is the best power boat that he has had anything to do with, and that the cabin arrangement worked out to perfection.

The boat is equipped with a four-cylinder, 30-40-h.p. Murray & Tregurtha engine, with a bore of $6\frac{1}{2}$ in. and stroke of 8 in., which turns a three-blade propeller 32x36 at 400 r.p.m., giving the boat a cruising speed of ten nautical miles per hour. The gasolene capacity is 300 gallons, stored in two heavy copper tanks located aft under the cockpit floor, with outboard drain. The tanks are aft of a water-tight steel bulkhead, and are thus completely isolated from the rest of the boat.

The companionway from the cockpit leads into the main cabin, which is finished in butternut trim. The transoms in the cabin are of the regulation extension type. The berth and the stateroom are 4x6' 2", with Pullman berth opposite, a feature of the stateroom being

a large bureau with ample sized mirror, with electric lights on each side.

The galley is well equipped with ice box, sink, stove, and other necessary appliances, the stove having a hood over same for ventilation in the smokestack. The fore-castle and engine room contain the crew's toilet, the necessary clothes, tool and battery lockers, and two good-sized pipe berths.

The engine bed runs nearly the whole length of the boat, liberally braced with cross-floors, which, as the owner states, is a good method of keeping a smooth-running engine free from vibration. The general dimensions of the boat are as follows:

The craft was built by Rice Bros., East Boothbay, Me., and was recently purchased by Mr. M. W. Houck, New Rochelle, N. Y.

Length o. a.	50	feet 0	inches
Length w. l.	44	" 6	"
Breadth	10	" 4	"
Draught	3	" 3	"



HURRAH'S NEST

"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



PANDORA

I HAD just re-read Captain Slocum's book on his trip in the yawl *Spray* around the world; and immediately following this, Mr. Andrade's very interesting criticism of the lines of that famous vessel. I was greatly possessed with a desire to be the owner of such a fine little ship. Saturated with thoughts of this kind, my surprise was great, when on opening the morning paper my eye caught the following sensational and to me interesting information in *The Argus* of Wednesday, June 1, 1910:

ROUND THE WORLD—A NINE-TON YAWL

"Recollections of the adventurous round-the-world voyages accomplished some years ago by the small sailing vessels *Spray* and *Tilikum*, both of which visited Melbourne, are revived by the similar expedition on which *Pandora*, a 9-ton yawl, is about to embark. *Pandora*, which is slightly smaller than Captain Slocum's *Spray*, is constructed on much the same principle as that vessel, which, naturally, she closely resembles. Built in Western Australia within the past twelve months, *Pandora* will, it is claimed, be the most diminutive craft that has ever attempted a cruise around the world, and, consequently, her movements will be watched with considerable interest. She arrived in Hobsons Bay yesterday, after a stormy passage from Bunbury, Western Australia, during which she had about 6 feet of her port bulwarks washed away by heavy seas in the Great Australian Bight. She left the West Australian port on May 3d, and has therefore been twenty-six days in accomplishing the trip.

"During the next fortnight *Pandora* will remain at moorings off Williamstown, where she will, no doubt, form an object of attraction. From this port she proceeds to Sydney, thence to New Zealand, Pitcairn Island, Easter Island, Juan Fernandez, the Falkland Isles, and

the United States of America. Subsequently the small vessel will sail across the North Atlantic Ocean to England, and return to Australia by way of the Cape of Good Hope. *Pandora* is owned by Captain G. D. Blythe, of Coventry, England, who will accompany the yawl on her long cruise, having as a companion Captain Pietro Arapakis. *Pandora*, a staunchly built vessel, is only 36 feet 9 inches in length over all, having a breadth of



Pandora Under Squaresail and Jib

14 feet 1 inch and a depth of 4 feet 1 inch. On her trip from Bunbury she is said to have acquitted herself in such a way as to leave no doubt of her abilities to bring her impending long cruise to a successful conclusion. Pleasure and a love of adventure seem to be the chief objects of the expedition; but should she accomplish her object, *Pandora* will earn the enviable distinction of being the smallest craft that has ever accomplished such a feat."

On reading this, I immediately penned a note to Captain Blythe, that on the following Saturday I would visit him at Williamstown.

I had no difficulty in picking out his little ship, so borrowing a dinghy, I rowed around her a couple of times before hailing, "*Pandora*, ahoy!"

A head soon appeared out of the cabin hatch, and with "Give me your painter," I was soon aboard.

There on a spacious deck, for a 30-foot water-line, I met Blythe and his mate Arapakis.

"Pardon the liberty of boarding you. I am so very interested in your voyage and in your little ship, that I have traveled 50 miles to meet you. I wrote a few days since informing you of my intention. Did you not receive my letter?"

"No."

"Then I must introduce myself. My name is Dickson; I own the yacht *Shamrock* and live in Geelong."



Pandora Passing Out at Queenscliff, Victoria Australia
Photos by T. A. Dickson



Pandora Close-Hauled

"Oh, indeed, are you Dickson, who took part in the Ocean Race? I have read of it and your yacht in *THE RUDDER*."

Needless to say, I examined Pandora with all the interest of one who truly loves a little ship. I found her just wonderful for her measurement, and quite agree with Mr. Andrade when he says:

"I conclude my analysis of Spray's lines with a feeling of profound admiration and respect. She is not only an able boat, but a beautiful boat; using the term 'beautiful' as defined by Charles Elliott Norton, 'that form most perfectly adapted to perform its allotted work,' 'beautiful' in the sense that Sandow, or the Farnese Hercules is beautiful. From the man who loves boats and the sea, and in some measure understands them (for it has been given to no one yet to know all their ways), Spray will receive the recognition that is her due."

Naturally, I was anxious to have Pandora visit Geelong, but slipping, etc., took so much time, that it was found impossible.

However I determined not to be outdone, and wrote asking that I might be taken as a passenger to the Heads, 30 miles down the bay.

"Delighted to have you," was the reply; "we leave at daylight, Saturday."

Friday night found me on board at St. Kilda, where we spent a very enjoyable evening, enlivened by gramophone selections from Melba, Caruso and minor stars.

About 10 p. m. wind came up fresh W. St. Kilda, from this quarter, is a horribly exposed hole; many a night I have spent here under similar weather conditions, and the pitch and tumble of the ordinary yacht is very trying, but on Pandora there was a distinctly easy roll, and an entire absence of the ordinary rattle and bang, which adds to, and indeed forms, the prevailing discomfort on a small yacht in a fresh breeze on a lee shore.

With the first of early dawn, Saturday, July 25th, sounded the click-click of the winch, as we took in the slack of the anchor chain prior to making sail, then a little difficulty getting the dinghy aboard, but finally we

had to lower mainsail and lift her with the peak halyards; this soon overcame the trouble. Now with the mainsail up again, make your staysail fast the port side, weigh anchor and off she pays on the port tack; a short board until we clear the end of the pier, and away; when we were free of all obstructions and could put her on a course. The sheets were trimmed, the wheel tied up; Arapakis went below to write up yesterday's log and Blythe disappeared down the foreescuttle to prepare breakfast.

I had full possession of the deck where, for the first time, I had a practical example of the wonderful balance possessed by Pandora.

Certainly, then she was close-hauled, but though later the wind freed a point or two, and we eased the sheets accordingly, no one was required at the wheel. As instances of this self-steering, I will mention that during breakfast and dinner—by no means hurried meals—nobody was even on deck. This was all very strange to me, for never previously, had I sailed on Port Phillip Bay without some one's continual attention at the tiller. Not being able to make the West channel, we decided on the South one. During the afternoon the wind fell very light and darkness found us just off Dromana, where we dropped anchor for the night.

Sunday morning, in a fresh Northeasterly, we soon ran the 8 or 10 miles to Queenscliff; with a free sheet and no one at the wheel.

Here I parted with my new-made friends, the remembrance of whose acquaintance, short though it was, is a real and lasting pleasure to me. Good fellows both, entirely free from all mercenary spirit, actuated only by love of adventure and the spirit of the sea! they leave these shores with my best and kindest feeling and their further voyagings will be a source of great interest to me. And as I watched them, from the Signal Station, gradually disappearing around Pt. Nepean, I felt confident that two years would see their safe and successful return.

T. A. DICKSON.



Another View of Pandora

OLYMPIC

THE accompanying illustrations are of the giant White Star liner Olympic, recently launched. The name Olympic has been fittingly reserved for a vessel that is the result of the highest intelligence and skill, combined with the greatest experience. The vessel follows a long line of predecessors, each marking an advance on the other, and every step that has been taken has been based on actual knowledge of its practical possibilities. Olympic, as an instrument of commerce, will represent the highest skill and perfection yet reached in naval architecture; and in the struggle for supremacy it is confidently anticipated she will easily hold the place of honor, and prove her title to the historic name that has been given her. The new vessel's principal dimensions are as follows: Length over all, 882 feet 6 inches; breadth over all, 92 feet 6 inches; breadth over boat deck, 94 feet; height from bottom of keel to boat deck, 97 feet 4 inches; height from bottom of keel to top of captain's house, 105 feet 7 inches; height of funnels above casing, 72 feet; height of funnels above boat deck, 81 feet 6 inches; number of steel decks, 11; number of water-tight bulkheads, 15. The tonnage is 45,000 and the displacement 65,000 tons. These particulars, together with the fact that she accommodates 2,500 passengers besides a crew of 860, give some idea of the vastness of the structure; but, although she is the largest vessel ever built, her mere size is not impressive to the accustomed eyes of those who are concerned with modern shipping. Olympic is very graceful, and only by contrast with other ships can her magnitude be appreciated. The launching weight, about 27,000 tons, was the heaviest weight ever transferred from land to water, and this operation, always (in spite of long experience) a matter of anxiety to those responsible, was naturally, in the case of such a vessel, an undertaking of unusual importance. The method of launching, however, was one of the simplest imaginable, the vessel being held on the ways by hydraulic triggers only requiring to be released by the opening of a valve in order to let the vast structure glide into the water.

Besides being the largest and heaviest vessel ever launched, Olympic is undoubtedly also the strongest. Both in design and workmanship this has been kept in



Olympic Taking the Water

view, and the most approved structural arrangements suggested by the ripest experience have been adopted, and every mechanical device requisitioned to secure this end. Never before in the history of shipbuilding have such elaborate means been employed, or such a combination of science, invention, and skill in the production of a ship; nothing has been left to chance; everything has been carefully thought out and skilfully planned, down to the most minute details, and from keel to truck Olympic will be as perfect as human ingenuity and skill and the most powerful appliances can make a vessel. The double bottom, extending the whole length of the vessel, 5 feet 3 inches deep (increased under the reciprocating engine room to 6 feet 3 inches), the massive beams and close framing, the large shell plates, the steel decks and water-tight bulkheads combine to make a structure of exceptional strength and rigidity. The hydraulic riveting in the vessel is also an important factor, the whole of the shell plating up to the turn of the bilge being riveted by hydraulic power, and an immense amount of this riveting having also been carried out in other parts of the vessel—shell, topsides, decks, stringers, etc. The rivets were closed by means of the powerful 7-ton riveting machines suspended from the traveling frames on the gantry; and



View of Olympic Taken Just After Launching. Her Weight at this Stage of Construction Was 27,000 Tons

while making the sound, tight connection so essential in this mighty hull, the rivets studding the shell plating present a very pleasing and symmetrical appearance. As illustrating the importance of the riveting in this vessel, there are half a million rivets in the double bottom alone, weighing about 270 tons, the largest rivets being $1\frac{1}{4}$ inches in diameter; and in the complete ship there will be something like three millions, weighing about 1,200 tons.

The arrangements in connection with the launch of a ship of such magnitude do not end with the release of the vessel, so that she may slide down the ways into the water; they include provision for checking the way on the vessel when in the water, as most launching rivers or basins are more or less limited in breadth, and in the case of a gigantic fabric like Olympic the means adopted will doubtless be found interesting. In the bed of the river were placed three heavy anchors on each side of the ship, each anchor being connected by a 7-inch steel wire hawser to eyeplates riveted to the shell plating. There were also placed in the bed of the river two piles of cable drags, each weighing over 80 tons, connected in a similar manner with an 8-inch steel-wire hawser. These were all arranged so that when the vessel was nicely clear of the end of the slip the drags and anchors acted simultaneously in bringing the ship to a standstill. As a further precaution, the ship's own bow anchors were stowed in the hawse pipes, ready for letting go in case of emergency. So effectual were these methods, that from the time the triggers were released, allowing the vessel to move until Olympic was stationary in the water, less than two minutes elapsed.

The machinery decided on for Olympic and her sister ship Titanic is the combination of reciprocating engines with a low pressure turbine, so successfully adopted in the White Star Canadian liner Laurentic, this arrangement having proved satisfactory from an engineering point of view, and at the same time the most beneficial to passengers, retaining for them the most highly perfected reciprocating engine on the "balanced" principle, eliminating vibration, and thus securing the utmost comfort by the smooth working of the ship.

As compared with Mauretania, Olympic is 92 feet 6 inches longer and has 20,000 tons greater displacement.



The Great Gantry at the Harlan & Wolff Yard at Belfast, Ireland where the Olympic Was Built



Atilio, 14-H.P. Clifton Engine

A PARAGUAY POWER BOAT

THE Republic of Paraguay lies wholly inland and contains about 100,000 square miles of well-watered territory. The rivers are the republic's principal highways and by them communication is kept up with Brazil, Bolivia, Argentina and the ocean. The principal streams are the Paraguay, Pilcomayo and Parana, navigable for light-draught vessels and emptying into the sea through the famous Rio de la Plata.

Throughout this region the boatmen are just learning the possibilities of the gasoline engine and are building boats and buying engines. The circulation of THE RUDDER is universal throughout the republic and it has many old subscribers and warm friends in that country.

The launch Atilio is used on the Rio Nigro, Asuncion, Paraguay. The launch is 32 feet 10 inches long, by 7 feet breadth.

Atilio is owned by Mr. Julio V. Masi, of Asuncion, and has been used for about 18 months. The engine has been the means of selling several other engines in the vicinity. This launch is built, like a great many English launches, of steel.

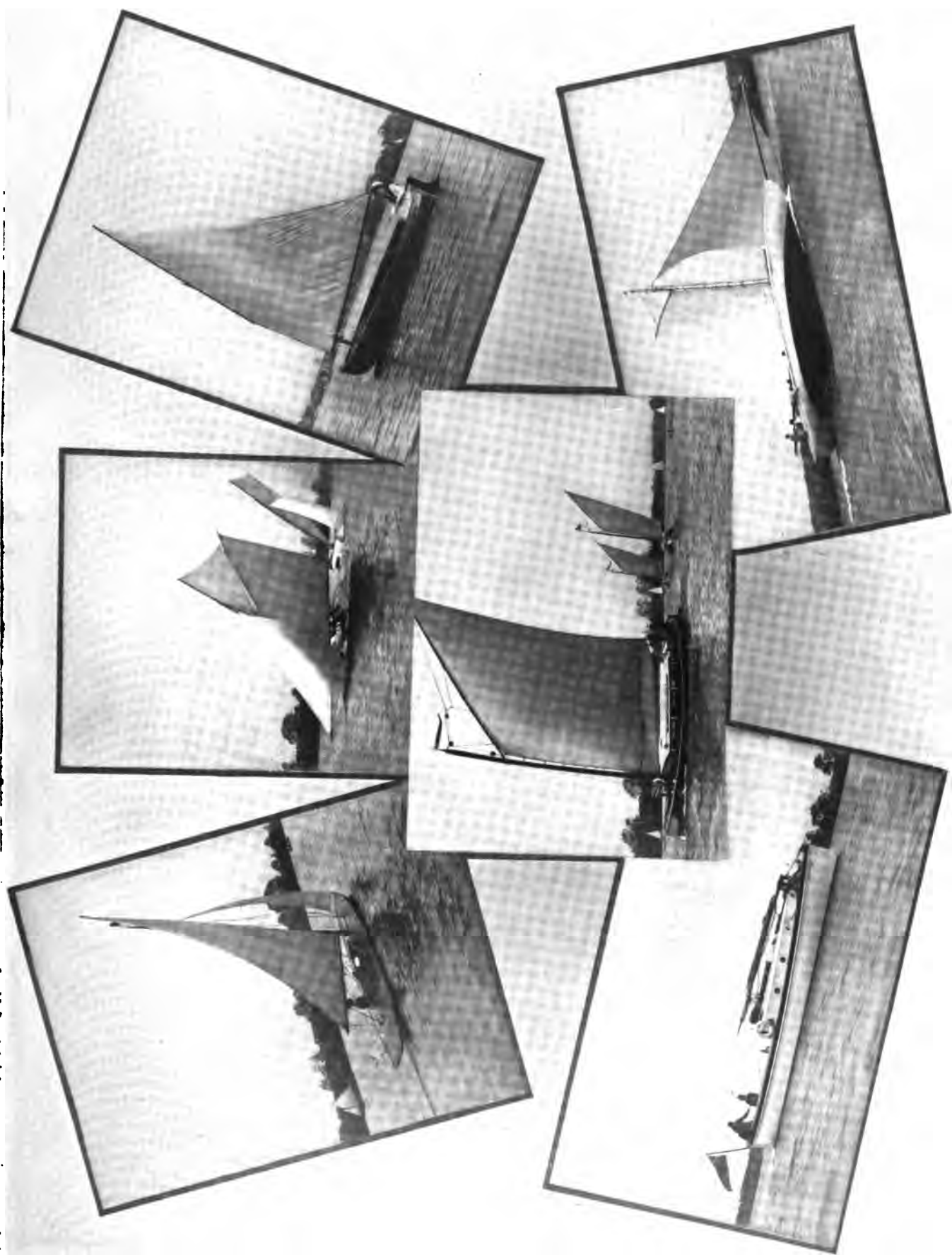
Mr. Masi has only the highest praise for the Clifton engine. It is significant of the widespread usage of the Clifton engine, and the great satisfaction they are giving, that this engine has found its way into the far-off country of Paraguay.

...

SOME NORFOLK BROADS CRAFT

THE Norfolk Broads, a network of lagoons, rivers, fairways and canals situated in the eastern part of England, are celebrated the world over. Owing to the shallowness of the water a distinct type of craft inhabit them, much resembling the shoal boats of our seacoast lagoons. Except that their canvas is distinctly British, the hulls shown in the pictures might be of American design and build. The wherry is an exception, as we have nothing of that type in the United States, nor are they to be seen in any other waters but those of Great Britain. It certainly looks like a wholesome craft and I would be pleased to have the lines and plans of one of these wherries.

We are indebted to Mr. A. H. Illingsworth for these excellent photographs.



Some Norfolk Broads Craft

Photos by A. H. Illingsworth

ROUND THE CLUBHOUSE FIRE

HELM-UP and ease sheets, the wind's working aft and the sea's going down. Here we are half the Winter gone, bottle and pipe empty, and nothing much to feed the fire with. You boys who don't have anything to do in cold-time but just set round and chaw over the last year's log ought to be willing to shake out a tuck a month earlier and get things under-way. If you are going to do anything, get out your notices and conditions early; don't wait until the birds have taken the signs off last year's nests. I see the Swedish yachters have got out the conditions for their long race, and are hard at work getting entries. The Bermuda Race, both sail and power, is well underway. I could talk fireworks on this subject, this getting things going early. Half the failures are due to putting off getting out notices and conditions until the last minute before the gun fires. And when you appoint a committee don't gather in a group of the near-dead; put in it the most alive people you can find on the beach.

* * *

The way races and regattas are run by some clubs is a crime. Careless, ignorant, slovenly management, badly arranged, ambiguous circulars, no attempts to properly classify the entries, course incorrectly laid out, poor turning marks, delay and a general state of flup. It would be far better if the associations would employ a competent person and pay him to run the weekly races, he having full charge, assisted by the club's officers. During the week this man could gather and arrange the entries, see the boats had certificates, lay off the course, and have everything ready by eight o'clock Saturday morning. By having a man to do this, his salary could be saved in unnecessary postage and printing, besides saving the Recording Angel making a host of unnecessary entries. Nothing so disgusts a racing man as to run foul of one of these fizzle-shows where a bunch of men who don't know their business try to direct a bunch of men who do.

* * *

Hang up your hats on that, and let's get back to sane-land. You can't keep the sport going unless you get to work early, and keep at it until the last gun fires. It is no use trying to keep yachting popular and inviting unless you constantly vary the menu. As it is to-day we keep the sport moving too much in a circle. It is the dog chasing his tail. Do something different; do something nobody else does, and do it differently. Any pastime, like water, becomes corrupted unless it is kept constantly in motion; but that does not mean to be stirring it always the one way. Talking about this reminds me of that Bug Class they are getting up on Long Island Sound. This will be a fleet, and Commodore Newman has

come forward with a sensible and happy suggestion that they parcel it into Divisions of Skippers. First division, the crack-a-jack skippers; second division, the fairly good timoneer, and third division, the green hands at the stick. When a man in the two lower divisions has won three races he moves up to the class above, until he is in the first division. This will give the learners a chance. Constant defeat through being up against better men is apt to cold-water the enthusiasm of the new hand. Whereas a victory now and again will spur him to renewed effort.

* * *

There is an old saying that all roads lead to Rome; but whoever thinks of going there by sea? As a seaport the ancient city is without a history. Unlike the other Italian towns it never sought glory or wealth on the wave. Venice, Genoa, Pisa, all at one time or another were hives of commerce, and spread their sway with oar and sail, but the Children of the Wolf had no love for the wide-rolling waters. Even the name of the port of Rome is almost forgotten; the spot where the ancient Romans learned to row on dry ground, that they might meet and conquer the skilled mariners of hated Carthage. Last month I told you of a cruising race from Venice to the Eternal City, and now am about to ask your attention to a race from New York to Rome. This is a jaunt over a little matter of four thousand miles, with several stopping places en route. I want to get two or more auxiliary boats to enter this match, say yawls of from 40 to 50 feet over all, with power and fuel storage sufficient to cover about one-quarter the distance. I will put in one boat myself and go along, if another man can be found to start against me. Now, don't all speak at once. The Executive Committee of the Touring Club Italiano have authorized me to offer a handsome trophy in their name, and to add that to each boat finishing, providing she reach Rome before or at the time of the racing there, a purse of \$1,000.

* * *

Rome lies almost in the same latitude as New York, but, owing to the peninsula of Spain, sleaving to the southward, the course is a curve with its lowest point at Gibraltar. Thence it trends North through the Straits of Bonifacio, and so to the mouth of the River Tiber. The navigation is simple, since it means from New York to Gibraltar almost a straight course. It is also over a stretch of ocean that in May and June is celebrated for its fine weather. The passage will take about thirty days. Think of it! Thirty days of rest and peace; thirty days away from money, telephones, letters, trolleys, newspapers, barbers, hand-organs, and women. Thirty days of pure air, of starlit nights, of rolling seas, of brilliant sunsets and beautiful dawns, of freedom, real freedom, and all that makes life, life!

When the woods and hills shall prove unkind,
 I'll back to my sea again,
 With its ebb and flow, and salt, salt wind—
 I'll back to my sea again.
 For she loves me well, my mother sea,
 And I hear her voice loud calling me—
 Oh, the woods and hills they weary me!
 I'll back to my sea again.

When the street and square shall fret my life,
 I'll back to my sea again.
 To her swing, and song, and stormy strife—
 I'll back to my sea again.
 For she loves me well, my mother sea,
 And the world hath naught to rapture me—
 Oh, the ways of men they weary me!
 I'll back to my sea again.

* * *

It is told of Lord Chief Justice Coke that he never read any books but law books, never had any friends but lawyers, and never willingly conversed on any subject but the law. When he sat to dine, he entered the stew with a general warrant, and recalled a half-cut mutton by writ of habeas corpus. Heaven save us from such unity of pleasure! Making a chestnut out of your profession and living in it like a worm. What that old rascal Coke did from inclination and choice, I am forced to by fate and necessity. My life is one perpetual hum of boat. Boat, boat, boat, boat, boat, in twenty languages and a thousand keys. I breathe boat, talk boat, laugh boat, dream boat, and curse boat. If I go to church the divine chooses his text from Psalms 107:23, or else discourses on the Miraculous Draught of Fishes. The actors in the playhouse wear yachting caps and hitch their trousers. At the concert the basso sings Dublin Bay, and the tenor, Larboard Watch, Ahoy! At the banquet the waiter invariably presents my ice-cream in mould of a ship or an anchor. If a man sends me a newspaper it is sure to contain some nautical article carefully marked, all my postal cards have pictures of vessels, and the only girls I ever meet who are willing to be agreeable to me wear Peter Thompson suits. I hate to read yachting publications, and never read this one except as a penance. Lately there has been something in it that I really enjoyed; but, save the mark, all the sea-lawyers are aft and want my only joy cut out.

* * *

Cut out the airships and flying machines? Now, look here, boys, don't you think it is only fair that a few pages should be given up to what I want to read? You have had full swing for years, and I've had not the first round turn. I buy the magazine and my copy costs a thousand times as much as yours does; but do you ever hear me kicking because it is chock-a-block with stuff about sailboats and power boats, and engines, and cruises and such uninteresting matter? I would like to have some corned jokes, some hints to home dressmakers, advice to the lovelorn, how to be beautiful and virtuous on five a week, how to make pin money with a needle, etc. Get off the course and give the *Oldman* a show just for one season.

* * *

Now let me have a growl. Why don't you people who are always kicking do something for me; why don't you get the other men to come in and help support the magazine? I'll bet my hat against a button that not one of the kickers ever sent in a fresh subscriber. What has the sport done for me in return for what I have done for the sport? Not ten per cent. of

the yachtsmen of the world buy this magazine, and yet the whole sport has benefited and benefited immensely by its efforts. Just to show how generous yachtsmen are and how they appreciate the value of my work, here is an instance. I lately wrote a club of four hundred men and suggested gently that they subscribe. The mate, who is extremely optimistical, wanted to bet that one hundred would send in the doubloons. I made it ten. How many do you think did? Five. Five out of four hundred; and the club is a club whose members I have helped in more than one way. Here's another sample. A man wrote and asked for some information. I spent five dollars and half-a-day's time getting it for him. He returned thanks and added that he did not subscribe, as he received two boating papers for nothing and felt that he could do without THE RUDDER. Hereafter I won't notice a kick unless it is accompanied by three dollars and the name of a new subscriber.

* * *

Talking about stealing designs and claiming the credit of other people's ideas. I note that several builders are bringing out Vipers under other names and trying to make the world believe they hatched the reptile. This is like the Japs. About two years ago they developed a new type of boat and launched it to the Oriental world with a grand burst of song; but alas, it proved to be only a copy of the Yokohama Larks rigged jib-and-main sail. Now, what I want to say to the builders, is this: If you are going to build Vipers, build 'em, but give the credit of designing the boat to Mr. Hickman. That gentleman has started in the building business himself and is turning out true copies of the original and only Viper, and will be glad to correspond with any one looking for a fast craft.

* * *

The catboat shown in this issue is an excellent little boat, and I congratulate Mr. Goeller on his work. This is just the thing for a one-design class, a class to get the young fellows interested. Why not try a fleet of them? It is these little boats that keep the sport alive. Get the young men into the sport and keep getting them in, and it will flourish; neglect this and it will dwindle and die. Recently a well-known divine came out with a statement that if he could he would not recall his boyhood days; that he was satisfied to be old and stuffy, and never wanted to be young, fresh, and joyous again. Fossil flumpisgo; no man ever really had such a feeling in his heart. If he did, he ought—well, let's not mention any particular punishment. Who wouldn't give up all his worldly goods, honors, titles, medals, to be a boy again? To carry the light heart, the limbs that responded like laughter, the heedless, careless disregard of life and life's ways, the appetite, the long, blessed sleep! Ah, youth, youth, even your blemishes are beautiful. I never knew but one man who had an unregretted youth, and he had suffered terribly as a boy, cold, hunger, and constant toil. Look back over the wake, and there, just sinking under the horizon, misty and purple, is the land we left, long, long ago. But eyes to the luff, and hand to the spoke; our port lies ahead; no vain regrets; take a fresh departure and drive on.

* * *

Here is something for all hands to do, and to do it. The United States Life-Saving Service have never failed to respond to our call, and not once but a thousand times have been of assistance to yachtsmen

in trouble and distress. They are always willing to give aid and advice to amateur mariners whether sea-wrecked or land-wrecked. These men have at present no provision made for them when too old or in any way rendered incapable of carrying on their work, and once out of the service their pay stops. A bill is now before Congress to grant a pension after certain years of service; this bill is called S. 5677. Now, boys, I want every man jack of you to write to the Congressman of your district and ask him to vote for this bill. Get the club at the next meeting to pass a resolution asking Congress to pass the bill and send a copy to your Congressman. This is not a request, but an order.

* * *

Just as soon as this heaves in sight send in your want and for sale for March. Please don't hold 'em back until the last and make a pierhead jump of it. We can't build the issue any heavier than last year, and I am going to shut down sharp at the usual number of pages. If you want to sell your boat, don't miss getting her bad photograph and exceedingly flowery, flattering description in the Fitting-Out Number. Hungry, anxious, nervous buyers are waiting for just such a craft as you are offering. You don't have to Wanamaker the price if the buyer don't like her after the sale. Also, if them as ain't had no Spray picture and is entitled to get one, will sail in with their requests one will be shipped. We want every subscriber to have a copy of this picture.

* * *

With regret I chronicle the loss of another of my old hands and firm friends, one whom I least expected to lose, and whose loss is a great sorrow, for a better sailor, or more noble, sensible, kind-hearted fellow never trod a deck. Several years back I picked up a book, the account of a sea voyage around the Hope. It was composed in diary style—a style I dislike in narrative composition—but no sooner had I read a few pages than it interested and charmed me. Despite the monotonous repetition of life on such a passage, the author had caught the very spirit of voyaging, and his daily notes were the meat and marrow of salt-water existence. Facts, just plain facts, but so narrated as to have all the interest and enchantment of fiction. I wrote a review of the book, and the notice brought the author, Paul Eve Stevenson, to see me, and we became fast friends. Mr. Stevenson afterwards rounded the Horn in a sailing ship and wrote an account of the passage. He was on board Ailsa in the ocean race a few years ago, and wrote a description of that contest. In our many days of yarning together I suggested to him that he write a sea novel;

to my surprise he told me that was something he could not do, as he had no imagination. Being myself a parcel of imagination I could not comprehend how a man could be without that faculty; but no doubt the absence of this sense was what made Stevenson such an interesting and pleasant chronicler of facts.

* * *

A man with a strong imagination is never a good historian. An historian must be flat-footed and tread keeping his heels and toes touching earth. This an imaginative man cannot do. He is like the mythical bird of Paradise that lived perpetually on the wing, scorning even the fleeting foothold of the highest, frailest twigs. Imagination is the poetry of intelligence. It is the pioneer of every art and science. It has no past, no present, no future; it is the always. It knows no boundaries, no heights daunt it, no depths appall it. It counts within its kingdom the outermost bounds of the universe. It is the imagination that carries us from star to star, from planet to planet, making a playground of space. It seeks the farthest corners of the earth; threads the wilderness, scales the peaks, and romps and laughs with the sea. It showed Columbus the low-lying isles and lofty mainlands of the New World years before the port of Palos faded astern of his barks. It pictured to Watt the giant before the first limbs of the first steam Goliath were drawn from the mould. It hovered o'er the alembic of Priestly and the crucible of Lavoisier. It dwelt with Stevenson in his cottage and with Fulton and Morse in their workshops. Guttenberg knew its power, and without its aid Cuvier could never have wrought those miracles of reconstruction, or Galileo established as truths the speculations of Copernicus. Blessed is he who possesses it, for, like the lamp of Aladdin, it has at its call all the powerful genii, under whose spell not one, but a thousand, palaces spring into existence.

* * *

Toll has been taken of two other yachtsmen, men who will be missed on the Eastern seaboard. Commodore Frederick Adams I have known for years. He was a man who, outside his business, lived for the sport and gave to it of his best. He was a clever skipper, a skilful sailor, and an efficient officer, but only those who for years served with him know how much Commodore Adams did for yachting, and did it willingly, cheerfully, and well. Mr. J. Rogers Maxwell, who died shortly after Mr. Adams, had a world-wide reputation as a racing yachtsman. As owner and skipper he sailed season after season for forty years, and during that time played the game in the fairest and squarest manner. To be an active yachtsman for that length of time, and to retain to the last the good-will and respect of your rivals is indeed a crown of glory.

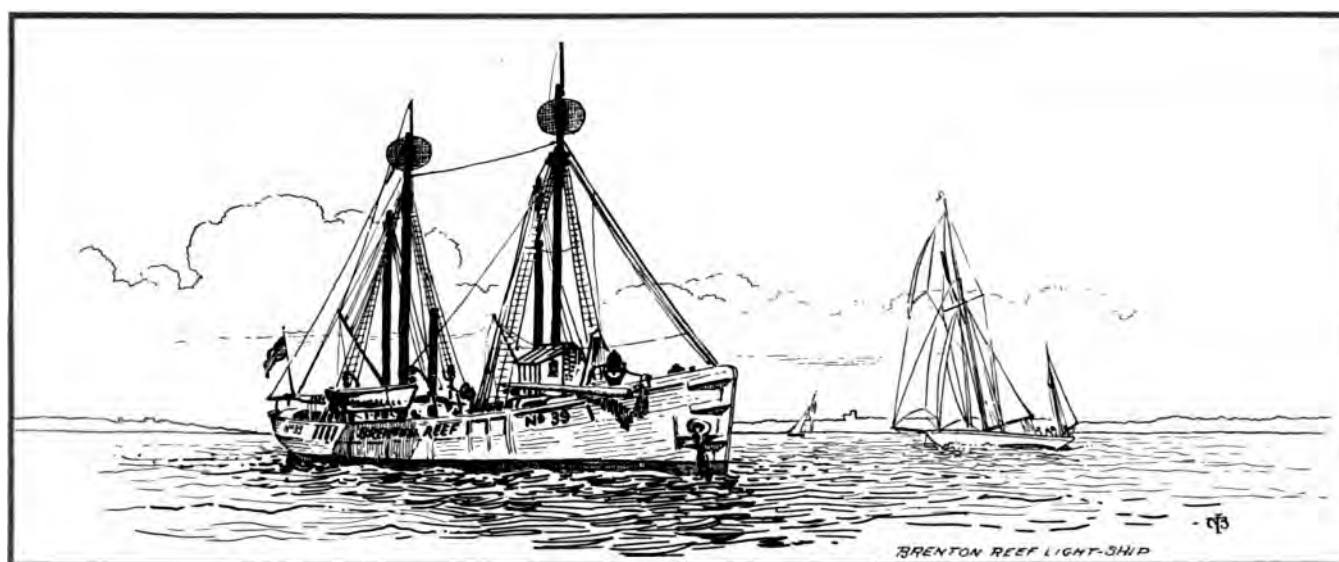


FOUR ONE CK

ISLE NEWPORT OF TODAY
AND YESTERDAY

OF PEACE

BY WINFIELD M. THOMPSON



**PRINTINGS BY
WARREN SHEPPARD
DRAWINGS BY
NORMAN IRVING BLACK**

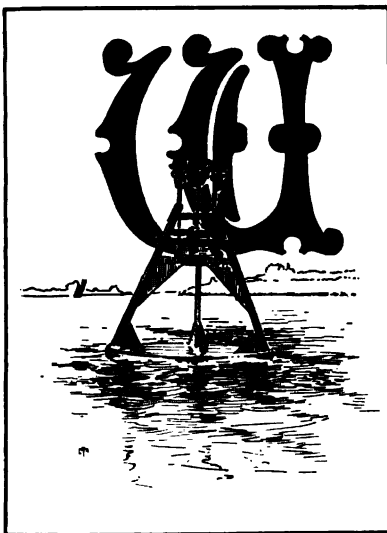
Drawings

BRENTON REEF LIGHT-SHIP
OLD MILL
THAMES STREET, CARNIVAL DAY
ENTRANCE TO NEW YORK YACHT CLUB
PANORAMA OF HARBOR, YACHT FLEET AT ANCHOR
OLD FISH WHARF
THE MORGAN RESIDENCE
LOBSTER WHARF
YACHT FLEET LEAVING HARBOR

Paintings

BEAVER TAIL LIGHT (Cover)
SUNSET, NEWPORT HARBOR
A BRIGHT MORNING FROM BEAVER TAIL





E will suppose you are entering Newport by train. It has been a torrid afternoon. The car is foul with cinders, dust, peanut shells, and vagrant odors. As the brakeman throws open the door and shouts "Newport, Newport—end of the line—all out," there rushes in a refreshing draft of deliciously cool air, in which is to be smelled the salt of the sea. As you descend from the train you face a gentle

evening breeze, that freshens you like a tonic.

With alert steps you pass the panting locomotive, dodge through an alley between two buildings, and come out on a long jetty, or wharf. One side of it is lined with wooden shanties in various degrees of decrepitude. The other is faced with massive concrete, against which the tide is splashing gently. Boats are anchored here, some of them stern to the sea-wall. Before you lies the harbor, filled to the last square yard with yachts. All are heading one way in the light wind. On each a riding light is blinking.

The massed white hulls seem luminous in the soft, gray dark, and searching for a cause to account for this effect, you find they are reflecting the lights of the town. As you stand there, reluctant to walk up the wharf and mingle in the life of the one waterside street, the fleet stands out more and more clearly. There is now a diffused light on it that cannot come from the shore. Each hull and mast and silvered stack is seen. For a second you are puzzled. Then turning to the left, you see the full moon rising over the roofs and steeples of the old Yankee town.

The scene presents Newport harbor as the summer traveler knows it best; for every evening at nine a huge steamer, carrying thousands New-Yorkward, swings into the channel at the north end of Goat Island, and berths at the end of the long wharf. After a stop of a quarter hour lines are cast off, and the four-storied hull, blazing like a palace of many lights, moves slowly out through a lane that has been kept free for it between the yachts and the island. Each one of her passengers, eager to see something of famed Newport and of the yachting fleet, looks his fill while the steamer is in port. Thus the Newport image is impressed on the gregarious travelers of the Sound steamer line, and the memory is carried as a sort of Aladdin's tale to many a distant home, where the nearest water may be a muddy creek, or a spring hole among the sage brush of a prairie.

From the sea-wall quay to Thames Street, which parallels the harbor side, is but a minute's walk. All visitors to Newport must pass through Thames Street. At one end of it is the square, where the car lines for the upper island and the main arrive and depart. On it are the shops of the yacht outfitters. At its lower end are the telegraph offices and post-office. From it

spring the various streets that lead up the hill to the homes of wealth and society.

Thames Street is the heart of old Newport, still retaining something of the character of its earlier days, when it was like the better business streets of New Bedford, Newburyport, Portsmouth and other old shipping towns in New England. Architecturally it is patchwork. Gables and cornices of all sorts make up its skyline. The buildings seem to lean against each other. A majority are of wood, and weathered. Some are of brick, and new. Yet the new has not entirely crowded out the old, and Thames Street is still unmistakably the chief thoroughfare of an old seafarers' town.

Sailors still meet here as they have met for near three hundred years. Lassies promenade on the narrow sidewalk in pairs, consciously modest, looking at a handsome Jack from the navy or the yacht out of the tails of their eyes. You find the crowd cosmopolitan. You touch elbows first with a big, blond Swede and next with a swarthy Japanese. The little tavern where you take a glass of beer is kept by an expatriated Azorean, to whom Lisbon is still the chief capital of Christendom, and Fayal the ante-chamber of Heaven,—if one but had the means to live there, sir, and educate the children as easily as in the States. The man who polishes your boots is a negro, a Newport voter who might well be descended, through but three or four generations, from slaves brought out of Africa in a Newport ship. The publican who books your name for the last decrepit bed in his dilapidated hotel is a German. Around the corner, you know from previous visits, in a little low-browed shop, painted a barbarian blue, is a Canton coolie, who puts out the best dish of lobster and pineapple this side of the world. He is quite as much at home in Thames Street as the lean Yankee dealer in antiques next door, into whose window an auto tourist from Pennsylvania, in duster and goggles is peering, in quest of old andirons and candlesticks, of which all New England seaboard towns maintain a supply equal to the demand.

While you note the cosmopolitan character of the crowd in Thames Street, you cannot fail to feel that its atmosphere is distinctly American. A spirit of genuine democracy is noticeable in old Newport. It is a survival, you soon find, of the liberal views and laws on which worthy old Roger Williams, driven from Massachusetts because he felt a man should have some mind of his own in religious and moral matters, founded the State of Rhode Island, of which Newport was for long one of the twin capitals. You can do pretty much as you please in Rhode Island, so long as you do no harm to others. Your private affairs are your own, and you are welcome to come or go without question. On this account I always enter Newport, whether by rail or from the sea, with a feeling that a welcome is never wanting. It may not be personal, but it is there, in every wharf, house and street of the old town.

Newport harbor is particularly hospitable to the cruiser, for it is snug and landlocked, and has good holding ground. Whether you anchor in Brentons Cove, over by the fort, where palatial residences look down on you from beetling crags, or in the shallower water off the lower end of the town, you find scarcely any tidal current—the tide's rise and fall here is but three and one-half feet average—and no wind that blows can start you adrift. You are always sure of company, from

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mammoth steam yachts down to dories. In spring and fall, when the butterfly fleet has fled, there are in the harbor a sprinkling of fishing schooners, rusty old coasters, or tows of barges, that are not half bad company.

The town, seen from the harbor, is not unlike New Bedford, rising on a broad hillside from the water, its houses half-hidden in noble trees, and its most prominent landmarks certain tall, slim, white church steeples.

Being at the entrance of Narragansett Bay, which opens directly on the sea, and facing the south, Newport harbor is easily entered in all weathers. There is generally an on-shore movement of sea, but even in a "brown Sou'wester," which blows straight into the mouth of the bay, the transition from heavy rollers off Brenton's reef to perfect smoothness inside Fort Adams is a matter of only a few minutes. Still there is another story in making the port in a thick Easterly, when it is easy enough to pile on Brenton's reef, or in a Nor'wester, when the reef looks bad as you round it, and worse when you get it under your lee.

The list of wrecks on that ragged reef has been a long one. From many accounts of tragedy here, I have chosen one, for the simplicity of its tragic story. It is in the form of a Newport letter to a newspaper, dated February 28, 1769:

Wednesday last, the wind blowing very hard from the West, a sloop belonging to Middletown was drove out of the Connecticut River, both her cables being parted by the ice. The people were all on shore, except the Mate and a Boy, who could not prevent her running on the East End of Saybrook Bar, where she lay near an hour and then beat over. They afterward made sail, intending for Newport, and got safe around Point Judah, when, hauling their wind to stretch in, the jib-sheet gave way, and she ran on Brenton's Reef, where she beat off her keel and filled. The wind continuing to blow hard, she beat over the reef in the night, and struck about eleven or twelve rods from the beach. The Mate held the Boy all night in his arms, wrapped in a blanket, and in the Morning swam to shore, leaving the boy on the quarter deck, who, being much frost-bitten, died before any assistance could be had. The vessel was loaded with cocoa and salt.

The shore hereabouts has witnessed many such scenes as this, and many another of more cheerful aspect. Across from the entrance of Newport harbor is Conanicut Island, where a revolutionary fort was placed; where troops of both sides landed in the historical struggle; where Captain Kidd anchored when he sent a messenger to Boston to pave the way with Governor Bellingham for his return with his gains; where some of the earlier residents of Newport had their country estates; where one may follow a road from one ferry to another on one's way to Narragansett, the old seat of the Indian proprietors of this region, when the land on which Newport stands was known as Aquidneck, Isle of Peace.

Back in the forties the handful of sloops and schooners in the New York Y. C. laid their first racing courses in these waters around Conanicut. Since then Newport has been known as a yachting center, and has witnessed some noble sport. The courses off Newport are by all odds the best on the American coast for large yachts, and the many slashing matches sailed here in the past are a fine part of American yachting history. What the future holds for the

sport here only a prophet could say, and there appear to be none such in yachting. Reading the recent signs of the times, one cannot be very optimistic about it.

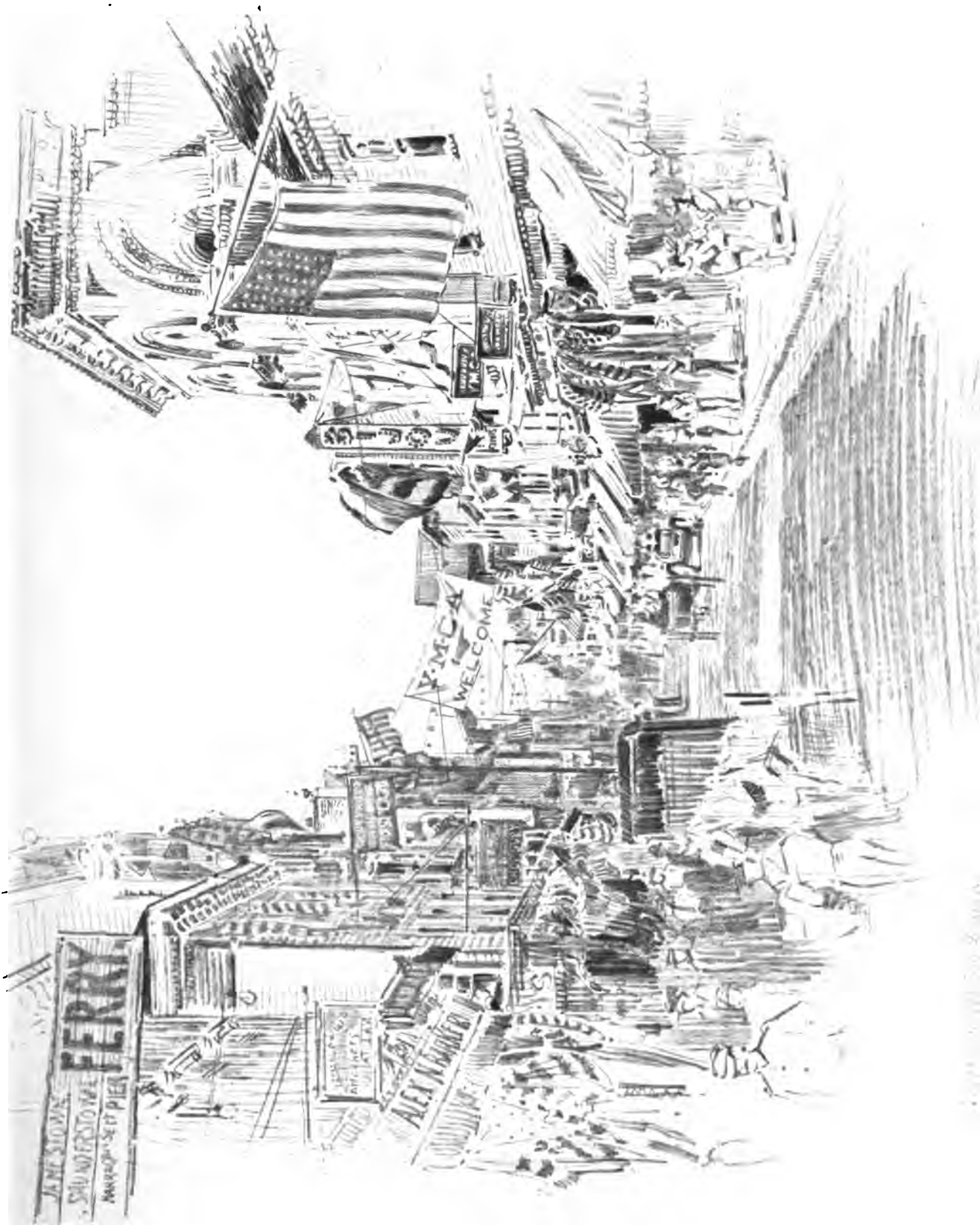
The old Newport spirit of seafaring does not survive in its yachting, which at best is ephemeral and exotic. Yachting activity at Newport rarely begins before July, and ceases in August. The height of the season is during the stay of the New York Y. C. on its annual cruise early in August. At such a time as many as three hundred yachts may be anchored in the inner and outer harbor. The chief events of the week, the races for the King's cup, presented to the club by the late King Edward VII, and those for the Astor cups, given annually by Col. John Jacob Astor, are followed with a certain interest by the members of the club. The public outside of Newport takes no interest in them at all. The people of Newport keep track of them, because race week means business, and were these races allowed to lapse the town would be a loser.

It is evident even to the casual observer that every year the fleet racing off Newport grows less and less important. This is due in part to a general decline in the racing of large yachts, and in part to the restrictive policy of the club holding the races. No yacht can start for the Astor cups that is not in the club's fleet. While the royal donor of the King's cup imposed as a condition in its deed the rule that it should be open to the yachts of all other American clubs, only one yachtsman outside of the New York Y. C. has ever raced for it. This was the late Richard Mansfield, in the schooner *Amorita*, in 1906, the first year the cup was raced for. I can see Mansfield now, clothed in a dressing gown, walking with histrionic stride the quarter deck of his schooner in the morning before leaving the harbor. It was said he had been denied admission to the New York Y. C. In this race he sailed as a member of the *Larchmont Y. C.* His was a character to take delight in such a situation, and as he paced the deck in the rain, he glanced aloft at his colors. He finished last, and no other outside owner has since started for the King's cup.

It is the cruising, rather than the racing yachtsman who gets the most out of Newport. Particularly rich is the return if he comes here with his mind fairly well stored with local traditions. He should have his boat well stocked with charts, and in the lot an old chart or two.

The whole region about Newport has been exceptionally well charted since the British occupation. Some of the earlier charts are really delightful documents. All credit is due to the English chart makers, who made the surveys for them, chiefly the engineers of His Majesty's fleet. I have before me as I write an old, finely drawn, accurate chart of Newport and its environs, colored, with typographical reliefs handsomely shown, and fine lettering, a view of which is like a journey through a familiar region in its earlier days. The map-maker, I judge, may have been one of those gentlemen of fortune who followed in the train in the British forces, for on the chart appears his name—Charles Blaskowitz. The chart was "engraved and printed by William Faden, Charing Cross, July 22, 1777," a little more than six months after the British occupation of Newport, showing that the fleet's topographers lost no time in getting to work after their arrival.

Its descriptive matter, neatly lettered in a corner, is so comprehensive, I give it here:



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The Colony of Rhode Island is situated between the 41st and 42d Degrees of N. Latitude, and between the 71st and 72d Degrees of W. Longitude, in the most healthy Climate in North America, to which many Inhabitants of the Southern Colonies and West India Islands resort in Summer as a place of health. The Winters are severe, though not equally so with those of the other Provinces, but the Summers are delightful, the violent and excessive heats to which America in general is subject, being allayed by the cool and temperate breezes that come from the sea. It enjoys many advantages. Has several large Rivers, and one of the finest Harbours in the World. Fish of all kinds are in the greatest plenty and perfection. The Horses are boney and strong, the Meat Cattle and Sheep are much the largest in America, the Butter and Cheese excellent, and every necessary of Life in abundances.

They have no established form of Religion, Episcopalians, Independents, Quakers, Anabaptists, Sabbatarians, Jews, Moravians, and all other sects whatever, have liberty to exercise their several professions.

Newport, the chief town, is situated upon an Island, of about 16 miles in length, and 4 or 5 miles in breadth; called Rhode Island, whence the Province takes its name. It is the Capital City, and contains nearly 10,000 Inhabitants. It has a Town House, Market House, Library, and a spacious Parade, but there are few private buildings in it worth notice.

Can we find anywhere a better description of Newport 134 years ago? Reading this, one easily goes back in fancy to the brave times when Newport was capital of the colony, when piety and a love of good rum, charity and a quick hand to a cutlass, were sister virtues among its people.

Owing to its location, on an island, at the mouth of a bay containing other islands and having at its head populous settlements, Newport naturally reared a population of seamen holding views on customs imports at variance with those of the King's collectors. It was easy to run a cargo behind an island and land it without the formality of custom-house entry, while there was always a reward to be garnered at Newport or at the head of the bay. These circumstances made the residents of Newport thorns in the flesh of the royal navy's officers stationed in those waters, and led to some of the earliest clashes between the people and royal authority preceding the revolutionary war. The first act of open resistance by the people of Newport was on July 9, 1764, when a boat's crew of the British schooner St. John attempted to carry off from the town an alleged deserter. The townspeople seized their chief fort, trained its guns on an admiral's ship then in the harbor, the Squirrel, and fired eight shots. I cannot learn that they did much damage. The next year a mob destroyed the boats of the ship Maidstone, whose crew were ashore impressing seamen. In the same year a mob, numbering a good sprinkling of sailors, we may be sure, scuttled in Newport harbor the King's armed sloop Liberty, which had taken into port two Connecticut vessels, charged with smuggling. This has been called "the first overt act of the rebellion on the sea." The boats of the Liberty were hauled through the streets of Newport and burned.

In the enforcement of the customs regulations the British officers often made false steps, without doubt.

How this roused the ire of Newport folks may be judged from this letter to the Salem Gazette of March 3-10, 1772, which I quote from a file of that paper:

Newport, February 24.

The fore part of last week an armed schooner, (what schooner we know not), seized a small freight boat, with about ten or twelve hogsheads of rum, etc., on board, which were sent from East Greenwich in this colony, to be shipped from this place to Philadelphia, in order to purchase flour, bread, etc., and we are told that this rum, etc., had been legally imported, and entered at our custom house. Also, we are assured, that on Thursday last a boat going from this Port to Prudence, in this colony, but a few miles from hence, was seized by the same unknown schooner, only for having three hogsheads of molasses on board, which molasses was legally imported, and the duties paid last week. These three hogshead of molasses, we are told, belonged to a poor man, who has now lost the full value of all he was worth under heaven!

Some say this p-r-t-c-l schooner belongs to K. G—— the Th—rd; but we should think it a little below his Br-t--n-c Majesty to keep men of war employed in robbing some of the poorest subjects, who are scarcely able to procure the common necessities of life, when those men of war might be well employed, especially at this time, against Spain, who has insulted the Br-t-sh flag in almost all parts of the globe, within these 18 or 20 months past. America, take care of your PROPERTIES! For according to present appearances, you may soon expect to have your fire-wood seized, if it be transported by water from one place to another without clearing and entering.

The above schooner has a number of swivel and carriage guns. Since the above account was received, we are informed that his M——y's schooner Gaspee has been cruising our rivers for near a week past; but for what intent we cannot learn, unless it be to meet, and MANFULLY attack, those enemies who lately have treated with contempt the whole English nation.

The schooner, a tender to the sloop of war Beaver, was soon marked for destruction by the sailors of the bay, backed by the sentiment of merchants in both Newport and Providence. Lieutenant William Dudingston, her commander, was openly denounced as a tyrant who robbed henroosts, orchards, gardens and fishermen's boats. Doubtless he did commandeer more or less in the way of supplies. A more serious cause of complaint against him was that he sent seized goods to Boston, contrary to act of parliament providing they should not be sent out of the colony where seized.

The storm gathered rapidly about the Gaspee. On March 21, 1772, Governor Joseph Wanton of Rhode Island requested her commander to show his authority for his acts. A reply was sent that was considered insulting by the governor, who was a sailor, a Quaker and a fighter. On June 8th, the Gaspee chased the schooner Hannah, Newport for Providence, Captain Lindsay. The chase took her into shoal water, and she grounded near Pawtuxet, on Nanicut point. The Hannah's captain carried word of this to Providence. Men were assembled by fife and drum, and in the moonlight marched to the wharves. Eight longboats were loaded with sixty-four men, armed with stones, scythes, pikes, and old guns



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loaded with birdshot. The schooner was surprised, the crew driven below, Lieutenant Dudingston was wounded. All hands soon left in the vessel's boats, while flames consumed her.

A reward of £100 was offered for the leader of this piece of work, but not a man of the sixty-four, nor anybody else, gave evidence. A court of inquiry was held at Newport, but nothing came of it, although the whole colony knew the deputy governor, Abraham Whipple, was a leader in the affair. Not long after this, Whipple, in his official capacity, addressed Sir James Wallace, in command of His Majesty's ship *Rose*, asking why Sir James molested peaceful shipping in the bay. The reply was:

You, Abraham Whipple, on the 10th day of June, 1772, burned his Majesty's vessel the *Gaspee*, and I will hang you at the yard-arm.

James Wallace.

To this Whipple sent this polite answer:

To Sir James Wallace.

Sir: Always catch a man before you hang him.
Abraham Whipple.

A few days later Whipple chased ashore on Conanicut Island the *Rose's* tender, by way of giving point to his note. Wallace took five coasters as prizes into Newport harbor, and while absent chasing another, the Newporters seized the five and liberated them.

These were but a few of the signs of impending conflict. On their heels came military occupation of Newport, when bluff English officers trod its streets; when beer-drinking, song-roaring Hessian soldiers frequented its taverns, and babbled military secrets to sly serving maids; when Yankee spies came into the place and went out again unscathed; finally when the dapper Frenchmen came in turn, and their bugles and drums sounded hourly in old Thames Street. The town in those days was in a fever of excitement and unrest, because of military alarms, and blockades or chases off its shores.

No visitor who has looked between the covers of an American or British naval or military history comes to Newport without a thought of its part in the war which resulted in American independence. It may be briefly outlined here. Newport was the only American town outside of New York held for any considerable time by the British, to whom its occupation proved as much an element of weakness as of strength. The British took formal possession of the town December 8, 1776. They evacuated it October 28, 1779, after a stay of two years, ten months and twenty days. Most of this time

their army, sorely needed elsewhere, was inactive. The chief incident of its stay was the arrival in August, 1778, of the French army under D'Estaing, to help the Americans take Newport. The French were landing on Conanicut, when Lord Howe appeared in the offing with a British fleet. The French reembarked their troops and stood to sea. For more than forty-eight hours Howe maneuvered with the French fleet for the weather gauge, and had out-maneuvered them when a great storm came on, forcing each ship on both sides to look to her safety. In a Northeaster that raged with tremendous fury for three days and nights, the fleets were blown far off shore and scattered. Vessels in both fleets were dismasted.

Howe accomplished his purpose by drawing the French to sea. They did not try again to land men at Newport, but set out for Boston to refit. This move of D'Estaing's caused deep disgust on the part of the Americans, encamped at Tiverton. But for the arrival of Howe and the storm, the town might have fallen.

One of the most interesting chapters in the career of Count Lafayette was enacted here at this time. The young nobleman was an invaluable ally of the Americans in treating with the French officers. The Americans distrusted the French. The French were irritated by the free and easy Americans, and their failure to observe the niceties of military etiquette. Lafayette tried his best to smooth things over. After D'Estaing's departure he rode seventy miles to Boston in seven hours, to persuade him to come back with his ships. D'Estaing promised to send the troops overland. Lafayette rode back to Newport in six and a half hours, only to find a bloody battle had been fought above Newport, and that the Americans were falling back. Lafayette was just in time to cross to the island from Tiverton and bring off the rear guard.

The British garrison at Newport now sat tight until withdrawn. Next came a second French army. They landed July 10, 1780. The town, that had lost a third of its houses by fire, and all its trees by the axe, was now reviving. The French were warmly welcomed. The streets of Newport presented day and night scenes that were not duplicated in the course of the whole war in America. It would have been easy to suppose the place a French town.

This occupation availed nothing, for the French were promptly sealed up in Newport by a blockading British fleet that appeared off the port and remained there. While this was going forward, the scene of the war was changing to the south, and Newport's importance in the game was over.

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These are stirring times to think upon in a quiet hour; but better still, when one is on a voyage to Newport, are the memories easily invoked from the printed page of the earlier days of the town's importance in Colonial trade; when it rivaled Boston and New York; when its London packets had regular sailings; when Portuguese and Spanish Jews made fortunes here in whale-oil products and general trafficking; when slaves were owned and traded in, and captains expected to make a fortune in two or three lucky voyages; when youth shipped on vessels of war, and able seamen sailed on ventures in privateers.

Newport's water-front then had docking for vessels for nearly a mile. Six hundred seagoing craft arrived in a year. Sailors of all nations mingled in the streets and taverns. The goods of both the Indies were in its storehouses. (An item in its imports for 1769 was 3,000 hogshead of molasses landed in the three months ending October 31st. This represented the cargoes of sixteen vessels.) Indigo, pimento, muscovado sugar, silks, teas, rum from Jamaica, wines from France, Portugal and Madeira, logwood for dyeing, tamarinds and china-ware were among the things advertised by its merchants. In the generation immediately preceding the revolution, Newport had seventeen factories for handling whale-oil products. The first trust in the country was formed by their proprietors, who controlled the secrets of spermaceti manufacturing. Newport then had also sugar refineries for handling cane brought from the West Indies in her own vessels, five rope walks, sail and rigging lofts, block shops, forges, and general stores for outfitting her fleet of 500 vessels.

The social life of such a community could not have been commonplace. For nearly half a century before the revolution Newport was a summer resort for families from the Southern States and the West Indies. Its permanent population was cosmopolitan. When Bishop Berkeley, the learned cleric, landed there in 1729, bound, as he believed, to the Bermudas to establish a college, he was greeted by such Newport residents as the Redwoods from Antigua, the DeCourseys from Ireland, Edward Scott (an uncle of Sir Walter) from Scotland, and the Bretts from Germany. There lived also in the town Portuguese, Spanish, Jews, and Negroes, besides the descendants of the Puritan English.

Charleston was the chief Southern port in communication with Newport, a line of packets being maintained between the two places. In 1771 a musical society in Charleston advertised in Newport for musicians, a first and second fiddle, two hautboys, and a bassoon, to play

in its concerts. After the revolution the South Carolina planters were prosperous, and many with their families spent their summers in Newport, living in old-fashioned comfort, with slaves to attend them, good horses to drive, and good wines to drink. There were no inns suited to such visitors, except a small coffee house; and all strangers of quality either "boarded" or rented houses. The residents took pains to call on visitors of consequence, many of whom came with letters of introduction. French people came often, as the commercial relations of France with this country occasioned the presence of representatives of French houses in the town. French milliners, teachers, and fencing masters lived in Newport.

There were many substantial, home-like mansions in Newport then—the British mapmaker to the contrary notwithstanding—and its population lived in a plain but comfortable style. Money was plenty, and lotteries were legal. Merchants and professional men wore cocked-hats, wigs, knee-breeches, and silver buckled shoes, full-cut vests, frilled shirt-fronts and cambric stocks; carried ebony canes with ivory heads, and altogether presented a figure worthy of the best models of the times in the old countries. With half an eye one may see now one of those prosperous Newport merchants standing in a low-ceiled, white wainscotted dining room, at a sideboard of Santo Domingo mahogany, mixing in a decorated china bowl a brew of arrack punch, a mixture then never out of place in Newport. West Indian and Medford rum were blended with arrack, lime juice and sugar with such skill, one may believe, that a better kind of punch was never made. The art of mixing arrack punch was esteemed as highly as the skill of a good cook, and Newport had many mixers and cooks who could prepare punch and turtle to satisfy the most exacting seafaring epicures.

It was the custom of Newport captains sailing to the West Indies to bring or send home a turtle whenever opportunity offered. With the turtle usually came a keg of limes, the juice of which was esteemed in punch. A noted turtle cook was Cuffy Cockroach—they were not particular what name they gave a slave. Cuffy was brought from the coast of Guinea when a youth, and had learned to cook in the home of Jaheel Brenton, one of the solid men of Newport, whose hospitality was famous, and whose name we speak to-day in naming Brenton's reef, for his country house stood on the point overlooking that spur of death. When a fine turtle was received in proper season, it was served picnic fashion at some convenient point, Cuffy being the chef. One notable party was held on Goat Island, on December 23, 1767,

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attended by the best people of the town, both men and women. The feast was spread on fine china, and was followed by dancing.

These picnic festivities were only occasional, whereas turtle feasts were given in the town with more or less regularity by a choice company of captains and shipowners, known as the Fellowship Club. This club was organized December 5, 1752, its first meeting being at the Black Horse Inn. One of its "rules and orders" was as follows:

"Members who shall go a voyage to sea, and shall return successful, without being cast away, taken by the enemy, or meeting with any misfortune, shall pay six pence sterling into the box for each and every month he shall have been absent."

This money, with dues and fines, constituted a fund for assisting members who might come to need. A moderator presided at the meetings. Gaming was prohibited. Rule 10 was as follows:

"The said society shall and will avoid all quarrels, fighting, challenging each other to fight, and all needless contentions and debates that may tend to create any fighting or quarrelling, or to disturb the good order, peace, friendship and love that each member shall and ought to bear to the other; and in case any two or more of the society shall happen to quarrel, or begin to quarrel or dispute, they shall immediately be put out of the company for that meeting, in order to avoid making the rest of the company uneasy or encouraging them to enter into a general quarrel."

This club, in June, 1785, became the Marine Society of Newport, which still exists.

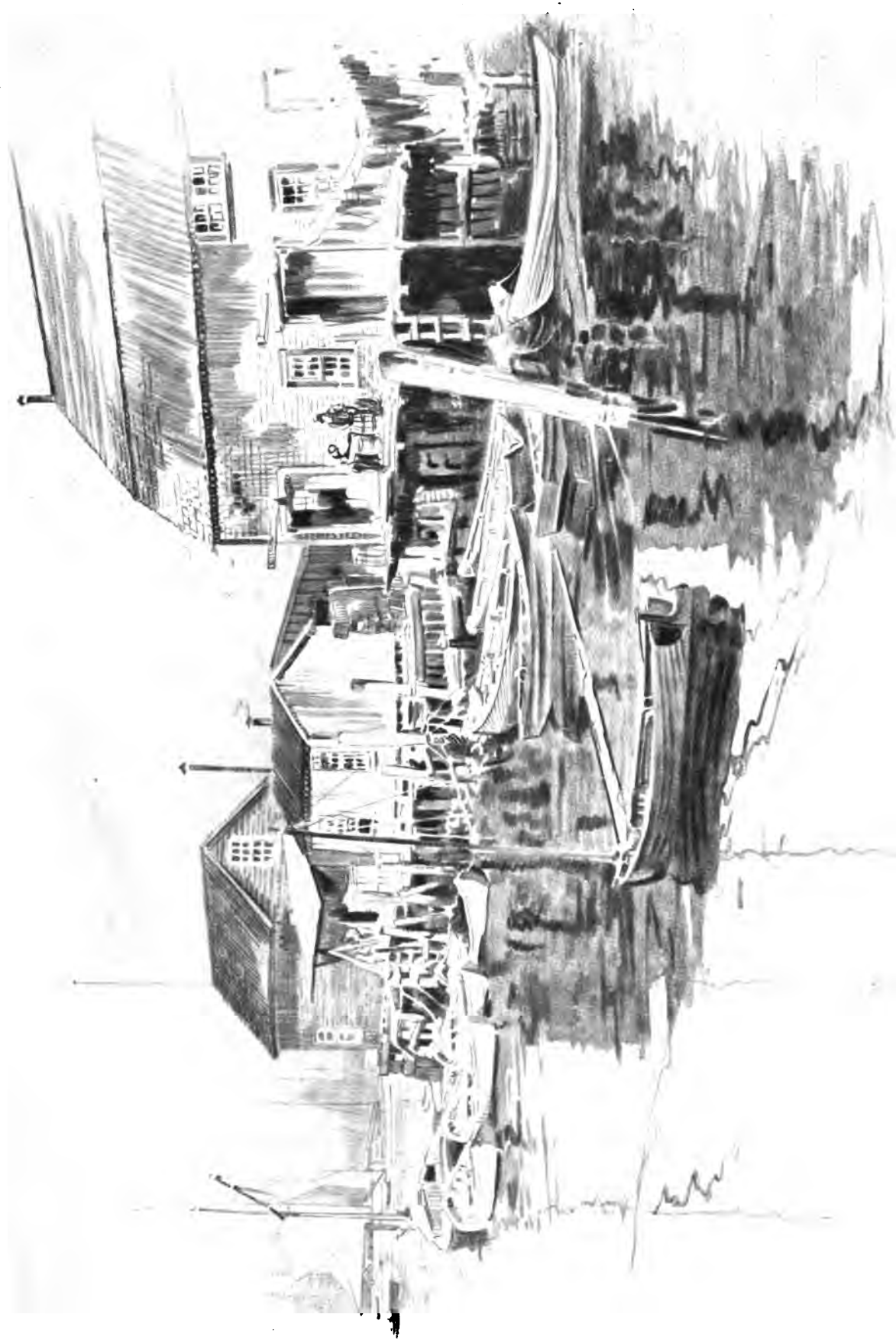
Not a few of the members of the Fellowship Club, and of the mercantile community of Newport, were Quakers. They were a shrewd, hard-working, quiet lot, averse to war on principle, but not entirely so in practice. A story told of one of them, Capt. John Hull, well illustrates the character of these seagoing Friends. Captain Hull commanded a London packet. On one of his trips he received on his ship as apprentice a boy destined to become known to fame as Sir Charles Wager, Admiral of the White. (He died May 24, 1743.) On the voyage home to Newport Captain Hull came up with a privateer schooner, whose evident intention was to cut him off and come abroad. Preferring not to fight in person, the Quaker captain shrewdly resigned the wheel to young Wager, who proceeded to steer for the privateer, with a view to running him down. The old Quaker remained below but a short time. He could not stand the strain, and putting his head out of the companionway said to the youth at the wheel, "Friend Charles, if thee intends to run that schooner down, thou must put the helm a little more to starboard."

The cruising yachtsmen cannot lie long at anchor in Newport harbor without wanting to see something of the town. He has barely set foot on the landing stage when he is solicited to enter a carriage, or a "rubber-neck wagon"—a huge, lumbering mechanically driven van—to repair forthwith toward Bellevue Avenue, in the domain of the Rich. I use a capital because it best expresses your would-be guide's respect for the word. Fall into his hands, and you shortly hear: "On your left is the marble palace of J. Stonebridge Gougem, one of America's Richest men; on your left is the larger and handsomer palace of Mrs. Gambleton Slush, the famous society leader."

Knowing these things, you will avoid the blatant guide, and go afoot. It is perhaps a mile from Thames Street eastward over the hill to the beginning of the Cliff walk. This public path about the craggy shore, for three or four miles, is the best feature of Newport's fashionable quarter. It is the one thing worth while open to the public in the new section of Newport. The views of the rugged shore of flinty crags, ledges, and little coves, where the surf tumbles and froths incessantly; the velvet lawns coming down to the edge of nature's rough and unchangeable ramparts; the lonesome mansions discreetly embowered in shrubs and trees arranged by the cunning art of the landscape gardener—these are worth seeing. The walk ends at Bailey's beach, where society bathes, and one may see on the sands slim, gracile young women, as clean-limbed as high-bred fillies, knowing neither toil nor care; fat old dowagers waddling about like ancient ducks; merchants, rich no doubt, yet unmistakably merchants, each of whom looks as if he had swallowed a melon, whole; and here and there an athletic young man, who has survived the wet blanket of wealth.

From the beach you make your way perforce into the lower end of Bellevue Avenue, in the section which wealth unwisely developed when all the shore sites were filled. There is very little one can commend in this main street of fashionable Newport. It is merely a long, straight narrow lane, between two walls of high hedges—a close, hot lane on a summer's morning, where the sea breeze does not penetrate; a lane lined with half-hidden palaces, as stiff and unhomelike as you can imagine; splendid though misplaced specimens of architecture, each calling aloud for a park of a thousand acres. However, these houses may satisfy perfectly the persons who live in them, whom you see hurrying along the avenue in heavy French automobiles, electric runabouts, traps, broughams, and what nots, as if they had been sent for. The stranger therefore may be content also, and turn without a shade of envy to a reminiscent walk in old Newport.

Unhappily little remains of its old water-front, except here and there a fragment and a name. Thus Lopez wharf conjures a Spanish or Portuguese owner of old time; and you pause at the corner of Farewell Street, and think some sailor's parting on the eve of a voyage may have given it the name. It pleases my fancy to suppose it was the scene of some such forbidden adieu as must have taken place in a pretty love story, I came across on a dim old page of Newport history. Here was duly set forth that in 1797 there lived in Newport a young man named Pollock, the son of a Southern gentleman, Col. Thomas Pollock of North Carolina, who had business relations in Newport, and spent much of his time there. The young man met at a circulating library, where young people assembled, a young girl named Ethel Ferguson, who lived with her mother, the widow of a Scotch snuff maker, whose shop had been on Long wharf. The difference in their social positions did not prevent the young people from falling in love. The young woman's mother forbade her visits to the library, and informed the young man that it would be time enough for him to look for a wife when he could support one. Young Pollock forthwith shipped as supercargo on the ship *Russel*, bound for China. On the outward voyage the ship was captured by the French privateer *La Harard*, and her crew was put ashore at Batavia. Pollock ob-



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tained employment there, and saved enough money to give him a start in life. With this he embarked for England. The vessel carrying him was captured by the Algerians, and Pollock found himself a slave to a Moorish master. In time he escaped, on an English vessel bound for Liverpool. He knew nothing of the war between Great Britain and the United States until the vessel in which he sailed was captured off the Irish coast by the Rhode Island privateer *Yankee*. In her Pollock gladly turned to, and served until she ended her cruise. She arrived home in August, 1813, as deep as she could swim with prize goods.

Pollock had been away from Newport eleven years. He rowed in the first boat that came ashore. With fear in his heart he asked for Ethel Ferguson. She had left Newport with her mother. Some said she was in New York. Pollock began a search, which lasted three years, and resulted in his finding his sweetheart of fourteen years before, living in straitened circumstances, in Long Island, and unmarried. That they were wedded forthwith and lived happy ever after we scarcely need record.

If the stranger would get something of the flavor of old Newport from what remains of it to-day, I would advise him to stroll in the neighborhood of the end of the long wharf, around the square. One of the most interesting buildings hereabouts is the old statehouse. At night the illuminated face of a clock in its façade attracts the eye to it at the far end of the dim and vernal area of the square. Its many windows seem to stare, as if they had been surprised long ago and grew into their present aspect. From the balcony the death of George II was proclaimed, and the accession of George III—"The King is dead; long live the King." Here the commission sat which tried solemnly but ineffectually to sift to the bottom the responsibility for the Gaspee affair. In the revolution the building was used in turn by the English and the French as a hospital. Neglected, it was in a sorry state at the end of the war. Peace was proclaimed from its steps on April 25, 1783. Here Rhode Island voted to accept the constitution, and enter the union of states. Here Washington, as President, stood and bowed to the cheers of the people. Here Oliver Hazard Perry, for whom a felicitous phrase in an official despatch—"we have met the enemy and they are ours"—earned a greater fame than any of his deeds of prowess, though they were by no means inconsiderable, was received by his admiring townspeople on his return from the scenes of war.

A bronze statue of Perry, in heroic pose, stands in the leafy square, opposite the house in which he lived for the few brief years left him after he won sudden fame. Seeing this house, which was his home, and the gallant figure of the statue, one cannot but bestow a sigh on the memory of his last hours, in the stifling cabin of a little government schooner down near the South American coast. He died a miserable death, of yellow fever; yet he died for his country, as surely as if he had perished at Lake Erie.

Around a corner or two the visitor may find the house in which Count Rochambeau lived when in command of the French troops at Newport. It is a stately enough mansion, now battered and neglected, standing at the corner of two narrow streets. A tablet on its second story gives its historical record. Here General Washington visited Rochambeau in the first week in March, 1781. There were processions, illuminations, and entertainments in his honor. A ball was given at which

Washington led out "the beautiful Miss Champlin," the reigning belle, and Count Rochambeau and his suit relieved the orchestra of their instruments and played the air "A Successful Campaign." Washington wore his continental uniform. Rochambeau bore on his bosom the Grand Croix de l'Ordre Royal, and the other French officers were in their bravest finery. The dames of Newport, from whom the privations of war could not wrest their satins and brocades, had brought out their loveliest gowns, and for a town that had been more than two years in the hands of an army of occupation, Newport made a gallant showing of the brave and fair.

The neighborhood where these scenes went forward is one whose every corner gives pleasure to the lover of earlier days. Many of the houses retain their character of the eighteenth century. Not far off is the church to which the learned Bishop Berkeley gave a fine organ, after his residence of six years in Newport. It may still be seen, a handsome instrument.

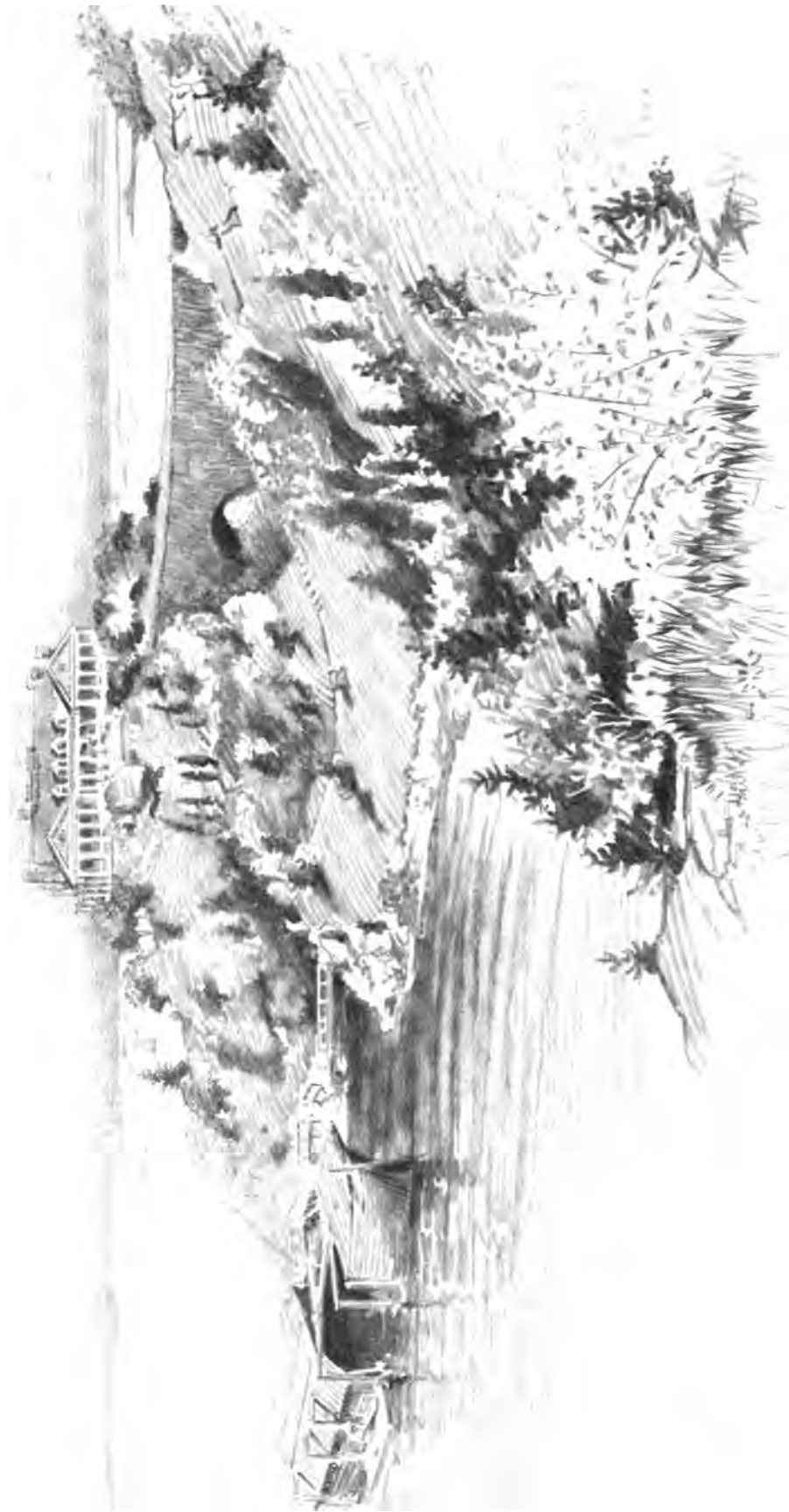
Up the hill a few steps is the old Jewish cemetery. I saw it last at night. Its stone gate was half in moonlight, half in shadow. It is of massive granite, the pillars ornamented with reversed torches, and a winged globe. The tombs were in deep shadow among the dense and well kept foliage. One is prepared to believe the inscriptions on them are in Spanish, Portuguese, English and Hebrew, according to tradition.

The very names recorded here are strange,
Of foreign accent, and of different climes;
Alvares and Rivera interchange
With Abraham and Jacob of old times.

Thus Longfellow. You can see dimly beside the walk the shaft that marks the tomb of Judah Touro, the generous old merchant of Newport and New Orleans, who showed the world a Jew may part with his money for a patriotic cause, and astounded the niggardly bluebloods of Boston, by giving \$10,000 toward the completion of Bunker Hill monument, when funds were coming slowly. It is to the munificence of Judah Touro that Newport owes a fund to keep up this cemetery, and the park where the old mill stands, which he gave to the city.

Beside the cemetery is the old Jewish synagogue, the first erected in the United States, dating from 1680. The street that leads from it to the fashionable quarter is named Touro Street. On it is the Redwood library, founded by Abraham Redwood, the merchant from Antigua. In this library—a quaint Doric structure, designed by Harrison, the architect of Blenheim House, seat of the Marlboroughs—one may see a portrait of Judah Touro, wearing an immense beaver hat, and a waistcoat buttoned closely up to his heavy black stock with a double row of metal buttons. The shrewd kindly eyes of the old Jewish merchant look out under heavy white brows. It is a smooth-shaven, strong face; the face of a man keen and just in a bargain, firm as a rock for principle, and as gentle as a woman for the poor and suffering.

Three minutes' walk south on Touro Street brings one to the park where stands the most celebrated structure in Newport, the old mill. Romancers have invested it with an entirely fictitious history. Certain antiquarians have discovered that it was erected by the Danes, and have gone on record to that effect. Other antiquarians are equally sure that it was erected by a colonial governor for the prosaic purpose of grinding corn. In the same park with the mill is a statue to Matthew Calbraith Perry, the American naval officer who negotiated the first treaty



Warren Point, Black.

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of a Christian people with Japan. He was a younger brother of Oliver Hazard Perry.

A glance at a single house, on your way back to Thames Street, will complete your historical pilgrimage. This is known as the Prescott house. During the British occupation it was the headquarters of General Richard Prescott, second in command to Earl Percy, and after Percy's return to England, commander in chief at Newport. General Prescott was small of stature, peppery of temper, and unfit to command. He caused every woman who met him to courtesy to him before passing, and every man to remove his hat. Quakers who refused to uncover to him he struck with his cane. But General Prescott was fond of such diversions as his post afforded. It is related that he was bribed by a kiss to release a prisoner. In summer it became his custom to ride out of town about five miles, with a small bodyguard, to the house of one Overton, a farmer. The farmer had a daughter. Rumor was busy with her name and the General's. Tales lose nothing from being passed about, and those concerning General Prescott soon reached the patriots at the head of the bay. They obtained exact information of the General's movements, and on a night in July, 1777, a party of forty-one men, under Major William Barton of Warren, a hatter but 29 years old, set out in five whale boats from Tiverton, to capture Prescott. A storm checked their progress. On the night of July 9 they left Warwick Neck, and with muffled oars rowed down the west side of Prudence Island, and made across the channel for the shores of Aquidneck. Three English ships were anchored in the stream, and one of them was passed so close aboard the "All's well" of the watch could be heard.

Landing without noise, the party made their way across a field to the farmhouse where Prescott lay. A single sentry posted before the door was seized and gagged. The General's bedroom door was forced, and before he could get into his trousers he was seized. He was allowed to put on those important garments, a waistcoat and slippers, and was rushed to the boats, and taken out past the ships before an alarm was given. He was sent across country to Washington's headquarters on the Hudson. The incident excited both chagrin and merriment in England. The London Chronicle hit it off as follows:

What various lures there are to ruin man;
Woman the first and foremost all bewitches;
A nymph thus spoiled a general's mighty plan,
And gave him to the foe without his breeches.

In justice to the nymph I am bound to say I have found no mention of her being in the room with the General, or in the house, at the time of his capture. Prescott eventually was exchanged for General Charles Lee.

Looking back on old Newport, I am bound to say that in the period of its maritime prosperity it had far more individuality than it has ever had since. To my mind material for the most readable chapter in all its history is found in the scattered annals of its privateering days.

The men of Newport cruised to intercept the African slavers; to capture Spanish galleons and richly laden West Indian ships; to prey on French fishermen on the banks, to watch the path of commerce to Canada. Their crews fought many a hand-to-hand fight; worked hard, drank hard, died hard. These Yankee sailors were free rovers in spirit. They carried things with a high hand—always under commission from their commonwealth, of course;

but some of these commissions were extraordinarily liberal.

The business of privateering was nothing to be ashamed of or concealed in Newport. It was the custom to advertise the sailing of a privateer, with a view to obtaining recruits, as witness the following from the Newport Mercury, of January 23, 1759:

Now lying at Taylor's Wharf, and ready to sail on a cruise against His Majesty's Enemies, the PRIVATEER BRIG DEFIANCE, Benjamin Wanton, Commander; mounted with 16 carriages and 24 swivel guns. All gentlemen, sailors, and others, have now a fine opportunity to distinguish themselves and make their fortunes.

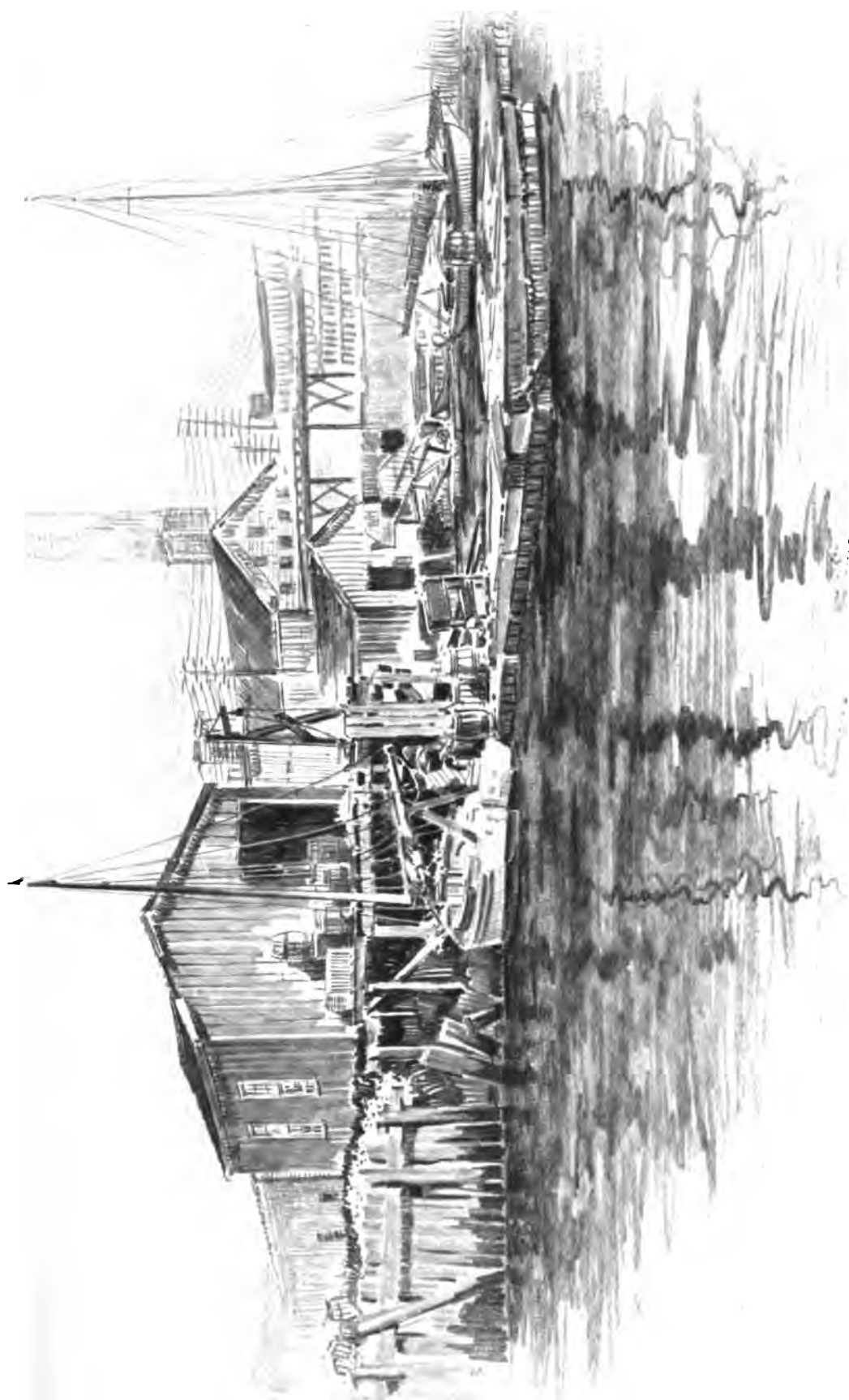
Privateers were fitted out at Newport as early as 1649. In her various wars of the seventeenth and eighteenth centuries, England always had the assistance of the Rhode Island privateers. From 1739 to 1748 not less than sixty-five privateer cruises against the Spanish were fitted out in the bay over which Newport stands sentinel. Their prizes were often insignificant, but that sometimes they were out of all proportion to the value of the vessels taking them is shown by the case of the schooner Fame and the sloop New Exchange, both small vessels, which on April 1, 1744, fell in with a large Spanish ship off Sugar Keys, on the north side of Cuba, and after worrying her into shoal water, where she grounded, took her at their leisure, thereby securing a prize that sold for \$340,000. During the engagement the Fame went ashore, and as a result the captain of the New Exchange subsequently declined to divide the prize according to agreement, contending that he had captured it unassisted. The case was taken up from the court in Jamaica to the court of Appeals in England, and was decided seven years later, on April 30, 1751, at the court of St. James, "the King's Most Excellent Majesty" being present, together with the Archbishop of York and other dignitaries. His majesty, with the advice of the privy council, approved the decree of the court of Chancery, which was in favor of the Fame.

Occasionally a rich prize was taken direct to Newport, as this old newspaper clipping shows:

Newport, May 17, 1745: Last Wednesday night, there arrived here Capt. Dennis, in one of our privateers, and brought with him a Spanish ship, and was bringing two more, but off the Havannah he fell in with two large Spanish men of war, which took them from him, and he narrowly escaped.

They have already taken out of this prize \$30,000, and have found a case of wrought plate that will weigh some thousand ounces. Her other cargo is very valuable, consisting of many tons of copper plate, and a great quantity of valuable china. The Spanish captain says the cargo is of much greater value than the money.

In the French war that lost Canada to France, seventy privateering cruises were outfitted in Newport and on the bay above, between 1753 and 1762. The adventures of these cruisers were numerous and varied. The captain of one of them, named Dennis (perhaps the same already mentioned), was presented with "a golden oar and five hundred pistoles" by "the general and other gentlemen at St. Kitts," for taking several French privateers; but his glory soon faded by a little mistake in taking a number of creoles out of a French prize and selling



Norman Irving Island

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them in the north for slaves. For this the French sent one of Captain Dennis' prize crews, which fell into their hands, to Havana, where they were put into the chain gang. To effect their release, the worthy privateersman had to buy back all the free persons he had sold as slaves, and liberate them.

Not a few of the Newport privateers were of the peaceful sect of Quakers. In the middle of the eighteenth century the most prominent of these seafaring Quakers were several brothers named Wanton. That these Quaker sailors knew a few things about the strategies of war on the sea is shown by this anecdote: A large French privateer had been annoying colonial shipping, and no colony vessel dare attack her, as she carried more metal than they, and was larger and faster. The Wanton brothers, hearing she was anchored at Marthas Vineyard, approached her in a fog, and anchored. That night they rowed silently under her stern, and firmly inserted wedges between her rudder head and stern-post. Next day, the weather having cleared, they hove to off her quarter, where her guns could not be brought to bear on them, and opened fire. The French captain, we may be sure, made sail; but the wedges did their work, and as his vessel was unmanageable, his Quaker friends finished the engagement in their own time, and captured him.

Another exploit of these men of peace is narrated as follows: Hearing that a French privateer was doing great damage along the coast, the Wanton brothers filled up the hold of a sloop with hardy lads from the Newport water-front, armed with cutlasses and other small arms, and put to sea, as if trying to escape pursuit. The Frenchman sighted the sloop, and gave chase and laid her alongside. When the privateer and his supposed prize were made fast to each other, the hatches of the sloop were thrown off, and her rough and ready crew rushed aboard the privateer, sweeping her decks of men and capturing her offhand.

More than two hundred privateer commissions were issued by Rhode Island in the revolution, and not less than one hundred and ninety-three privateer cruises were successfully begun from Narragansett Bay. In November, 1776, John Paul Jones, when in command of the sloop of war *Alfred*, tried to enlist men at Newport but could get none, as they preferred privateering. The privateer *Eagle*, Captain Isaac Field, had sailed the day before, and anchored at Tarpaulin Cove. Jones, sailing down Vineyard Sound, saw her, laid her alongside, and took twenty-four men out of her by force to make up the *Alfred's* complement.

The vicissitudes of a merchant vessel in those days are shown in the case of the *Pelican*, from Boston to London, which was taken by a French privateer, was refitted at Nantes for privateering under the French flag, was retaken by a Rhode Island privateer off the banks of Newfoundland, and returned to her native land with her hailing port changed from Boston to Newport.

That the business of privateering had its drawbacks may be judged by the fact that at one time (July, 1778) seventy-eight men from Rhode Island privateers were in one English jail, Forton prison.

To guard against misfortune, many of the privateering captains resorted to the counsels of astrologers, whose art they held in high esteem. One Captain Robert Shearman was owner of a brig with his father-in-law, Robert Taylor. Shearman often refused to start on a voyage until the signs were right. He consulted the stars, and if they favored, he started. On one voyage he was captured by a French privateer, but was afterward retaken by a Yankee vessel. This latter piece of good luck was attributed to the influence of the stars. Godfrey Malbone had two fine privateers built. Manned with two hundred picked sailors each and ready for sea, their builder had a horoscope cast to learn when they should sail. The oracle said on Friday, December 24, 1745. On that day a snow storm came on. In spite of the storm, the unlucky day for sailors, and the date, the new ships went to sea. They were never heard from after rounding Brenton's reef. The heads of nearly two hundred Newport families were lost in this disaster.

The sailors of Newport did not always confine their activities to privateering, but engaged in the business of transporting rum to Africa, and trading it for slaves. In this peaceful occupation the Quakers took their chances with the others. Sometimes their luck played them scurvy tricks. Such was the case when one of the Wanton brothers had the tables neatly turned on him by the French, as I learn by a deposition he made on his return to his home, as follows:

I, Joseph Wanton, being one of the people called Quakers, and conscientiously scrupulous about taking an oath, upon solemn affirmation say, that on the 1st day of the month commonly called April, A. D. 1758, I sailed from Newport in the snow *King of Prussia*, with a cargo of 124 hogsheads of rum, 20 barrels of rum, and other cargo; that on the 20th day of the month called May, I made Cape Mount on the west coast of Africa; that I ran down the coast and traded

until I arrived at Annamibo, where, while at anchor, on the 23d of the month called July, when I had on board 54 slaves, 20 ounces of gold dust, and 65 hogsheads of rum, I was taken by a French privateer of 60 guns, fitted out at Bordeaux, called *Le Compte de St. Florentine*, having on board between 500 and 600 men, while my vessel had but 3 small pieces and 11 men.

The slaving Quaker was landed destitute on the African coast. Two other Newport slave vessels shared the fate of his. One of them was given by her captors to a native prince, who, with humanity the whites had little ground for invoking, gave her to the three wretched crews of marooned sailors, who returned home in her. This same Joseph Wanton became a rich Newport merchant and governor of Rhode Island. For years he was conspicuous for his fine clothes and his snowy wig with three curls, one over each shoulder and one behind. It was he who held the office of governor at the time of the Gaspee affair, but in 1775 he was ousted by

the people because of his non-resistance theories, which seem to have developed with prosperity.

Before leaving the worthy brotherhood of the sea hailing from old Newport, I must say a word about pirates, with which the coast at times was sadly pestered.

In 1723 two pirate sloops were captured by the British ship *Greyhound*, and brought into Newport. Their crews, numbering twenty-six men, were all hanged, on the nineteenth day of July, at Gravelly point, "within the flux and reflux of the sea," and were buried between high and low water marks on the north end of Goat Island.

Thomas Tew, a noted pirate, who established a colony in Madagascar, with the equally distinguished pirate *Mission*, was a resident of Newport, to which he returned after making a fortune in the Eastern seas. We may be sure that no embarrassing questions were put to him by his neighbors when he settled down to a respectable life in Newport, for it is a principle, inborn among the people there—a legacy from Roger Williams—to allow every man to live his own life in his own way.



THE WRECKS

*THE Song of the Wrecks that is lifting
Like a sea-sand to-night in my brain,
From thoughts that forever are shifting,
When I think of the lost of the main,*

*Will rise like a bar that has striven
To form in defense of the lee,
Up-built of the sands that are driven
From depths of the wind-worried sea.*

THE SONG

We are the fleet of the shattered,
The sunken, stranded and stove;
The reef and the headland battered,
The tide and the tempest drove.

The shoals of the Baltic hold us;
We swamp in the Frenchman's Bay;
The swell of the Gulf has rolled us
On the fangs of Gordo's Cay.

We lie in the depths unsounded,
We sleep in the ooze and slime,
Our tombs are the corals mounded
On rocks of the torrid clime.

We grind on the grinding shingle,
Of the dead Australian shore;
Our masts and the mangroves mingle
In the Hooghly's muddy bore.

We drift on the windless reaches
Of the warm and weedy sea;
We scorch on the salt-white beaches
Of the Dutchman's Caribbee.

In maze of the isles uncounted
That circle the Celebes,
At feet of the cliffs unmounted
Of the wind-wild Hebrides.

We bilge on the flanks of Lundy;
The Wolf it has knawed our bones;
We hog on the Flats of Fundy,
We split on the Seven Stones.

By teeth of the reef we are bitten;
By claw of the sea we are torn;
By lip of the sand we are smitten,
By hand of the gale we are shorn.

On spurs of the Madre Dios,
On sands of the Tideless Main,
In roads where the East winds lee us—
We die by the rotten chain.

In wake of the floating masses,
In drift of the Southern ice,
Where field of the crystal glasses—
We crunch in the frosty vice.

In land of the palm and proa,
We're flung by the black typhoon,
Like seed from the hand of sower,
To rot in the still lagoon.

On ocean's chartless stretches
Where never a sail may flow
We drag abandoned wretches
To die in the daze of snow.

We strike to the roar of breakers
That foam on the Virgins Nine,
Then dive with our shrieking makers
To peace in the peaceless brine.

We sink with a sudden shiver
When stripped of the mast and sail,
In seas that impulse and quiver
With shock of the distant gale.



*The waves of the mid-sea count them;
They are told by the Winter's gale;
And crests of the surfs that mount them
Have reckoned for more than a sail,*

*But some there are left yet untold for,
Of the thousands that darken the list—
The ones there is nothing to hold for,
The ships that no owner has missed.*

Betrayed by the Jibber's flashes,
Burked by the auger's edge,
Stove in deliberate smashes,
And sold to the sunken ledge.

By butt that is thirsty starting,
By stress of the beam-burst wave,
By tackle of tiller parting—
We go to a sudden grave.

By plank and by frame that had rotted,
By hatches that never were tight,
By skipper, the careless, besotted,
By lookout that slumbered at night.

No land but its fore shore bears us;
No sand but we lump its back;
No bar but its breaker tears us;
No course but we spot its track.

By wing of the whirlwind shifting,
By crash in the blinding fog,
By hulk in the sea-wash lifting,
By stab of the sodden log.

We are the wrecks that are scattered
Wherever the sail has spread,
The scuttled, stranded and shattered,
The fleet of the Ocean's dead.



*The Fleet of the Lost, I have sought it,
I have searched for it widely and long;
From reef, and from deep, I have brought it
To an anchor to-night in my song.*

*Then, O bide in my verses, thou lost ones,
There is shelter and safety for thee,
There is harbor and peace for the tossed ones
And a port for the shack o' the sea.*

THOS. FLEMING DAY

The Rudder

Edited by THOMAS FLEMING DAY

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No. 3

THE PEARLING INDUSTRY OF THE NORTH-WEST COAST OF AUSTRALIA

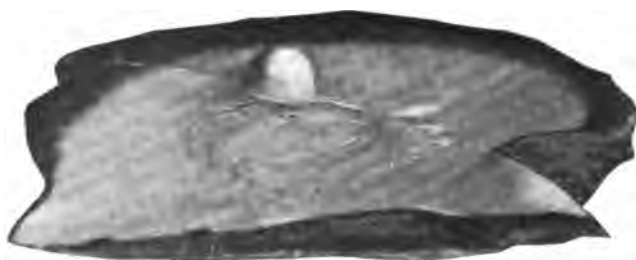
John Bourne



TO DESCRIBE the pearling industry, of which Broome, Western Australia, is the headquarters, it may be as well to first furnish a description of the pearling lugger. The average size of the luggers are from 36 to 38 feet on the keel, 42 to 45 feet over all, and a breadth of 12 to 13 feet, with a draught of 6 feet, registering from 12 to 13 tons, although some of the recently built boats register 15 and 16 tons. They are all schooner-

rigged, carrying jib, foresail and mainsail. They are manned by six Asiatics, viz.: One diver, who is in charge when the owner is not aboard; one tender and four crew, although some pearlers, wherever possible, provide a spare crew, making with the owner, or shell opener, a total of eight all told. Apart from the necessary diving gear, each lugger is provided with two cables, one being 60 fathoms of 9-16-inch chain with a hundredweight anchor, the other being 60 fathoms of 1/2-inch chain and an anchor weighing from one-half to three-quarters of a hundredweight. The heavy cable is used for overnight, the lighter one being used during the day while the diver is working. The cost of a fully equipped lugger can be put down at £500. There are at present some three hundred and fifty of these boats engaged in the industry. There is a stretch of some 450 to 500 miles of working ground, between King Sound and the North-west Cape, but the principal part of the fishing is conducted between 70 miles North and 150 miles Southwest of Broome. The depth of water varies from 4 to 14 fathoms, but some divers venture out into 17, 18 and 19, and occasionally as deep as 20 and 22 fathoms.

The season commences in the early part of January and the luggers work to the northward of Broome to start with, gradually working down, so that by April they are within sight of the town. Going into port between the 15th and the end of April, they are cleaned, painted and rationed for three or four months and then make for the "Ninety-Mile Beach," where the best shell is found. This beach commences some 80 miles to the Southwest of Broome and has a stretch of 90 miles—a low-lying sandy coast-line, varying very little in height at any place. It is along this beach that the fleets work until August, when they gradually work their way back to the Northeast, so that by November they are all off Broome again. Some of the fleets are laid up at the end of November, but the majority are not so till December 15th. The boats are then run up on the mud flats and the town becomes a busy place for six weeks. General overhauling, repairing, and preparing for another season then takes place. The industry is worked by colored labor, Japanese, Malays and Manilamen forming the bigger majority. The average yearly take of mother-of-pearl shell may be put down as 3 1/2 tons per lugger, although some average 4 to 4 1/2, and a few crack divers regularly raise their 5 and 5 1/2 tons per season. There are seven schooners of over 50 tons register and several smaller ones engaged. Four of these vessels are employed during the season in tending on the fleets, such as supplying fresh water, firewood and stores, and taking shell into Broome for shipment to London and New York. In the olden days there were several schooners of 100 to 150 tons working from twenty to thirty luggers each, collecting the shell daily with whaleboats and power launches; but the idea of a big fleet is now almost a thing of the past, as the smaller fleet, say of four luggers, with two white men in charge and to open the shells, has proved itself a far more profitable way of



Pearl Blister Found by One of the Broome Pearling Fleet, Which Sold for \$2,000

working. The different fleets are recognized by distinguishing marks, such as different styles of painting, etc., the best mark of any being a cane work ball 18 inches in diameter painted black. One fleet has a ball on each masthead, another a ball on the foremast only, while another a ball on the mainmast; another mark being two balls on the foremast. During the months of May, June, July and August we get the Southeasterly and Easterly winds (a land breeze), which freshens every evening about ten o'clock, blowing strong by daylight and easing off towards noon, when it becomes calm for an hour or so; after that a light Southwesterly and Westerly breeze sets in for the afternoon. From August until November we can look forward for the Southwesterly and Westerly



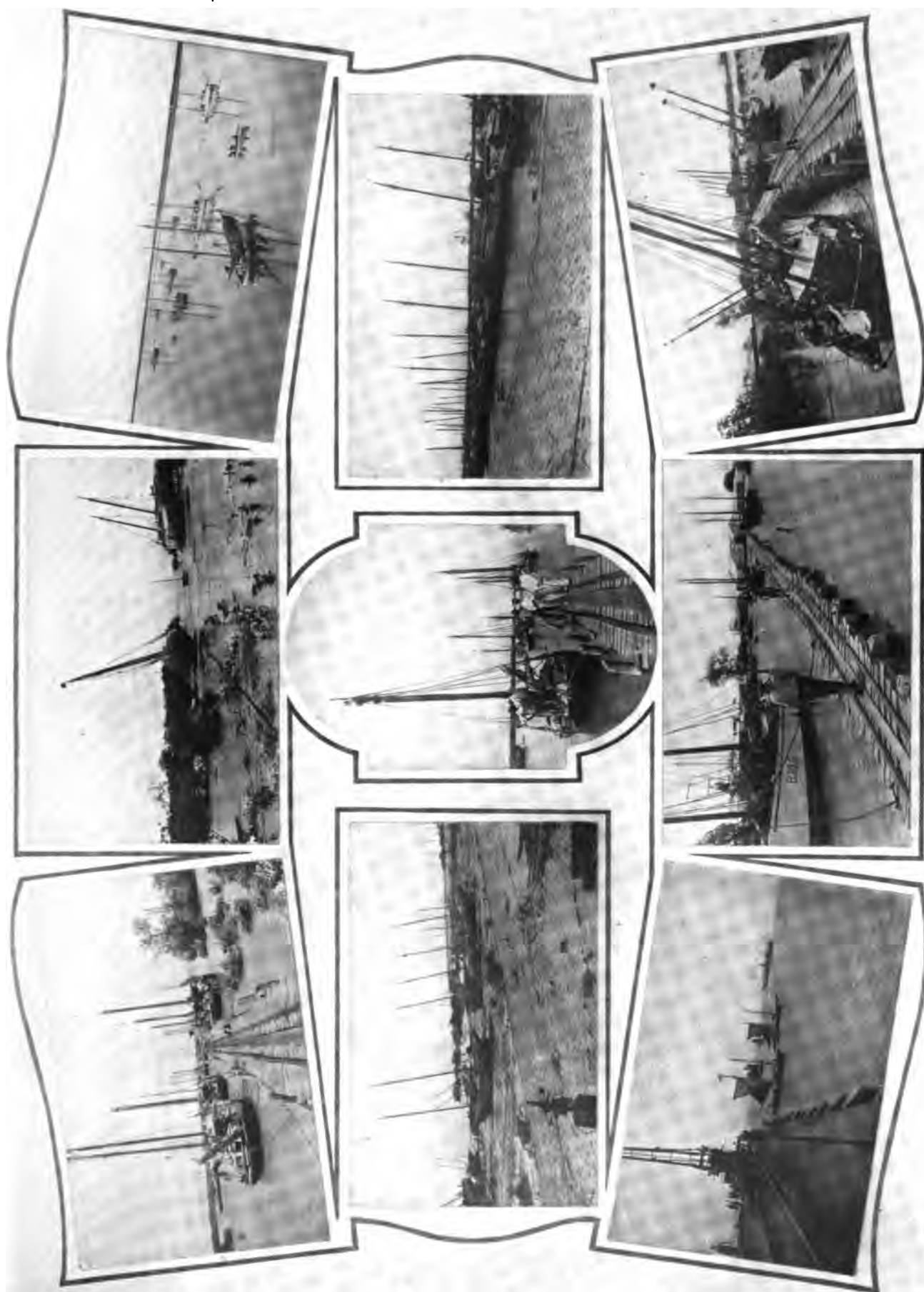
A Typical Pearling Schooner



Deck Load of Mother-of-Pearl Shell

winds and between December and April, Westerly, Northwesterly and Northerly winds, rather strong at times. We enjoy a lot of fine weather here, otherwise the industry could not be worked

In 1908 we suffered two hurricanes, one on April 26th, the other on December 10th, both of which did considerable damage to the fleets. About fifty luggers and two schooners were sunk, while two schooners and several luggers were piled up on the beach. A great number of lives were lost on both occasions, seven of whom were whites. It may be worth while to mention that the township of Broome, with a population of about 300 whites and over 2,000 colored people, is entirely dependent on the industry, having no other means of providing for its welfare. The life aboard the pearling lugger, although not a luxuriant one, cannot be said to be possessed of any hardships. Having their morning coffee with the first break of day, the tender and crew lift the heavy cable and then drop the light one to be used during the day. By this time the diver is all ready for dressing, after which operation is performed he makes his first descent, taking with him a network bag to hold the shell. Working in shallow water, say up to 8 and 9 fathoms, he can remain on the bottom for a period of an hour, when he ascends, and, after a spell on deck of a quarter of an hour or so he will go down again. In water of 12 and 14 fathoms, half an hour is sufficient time to remain on the bottom, while in 17 fathoms and over a period of ten minutes on the bottom, with a spell of at least half an hour on deck, is essential to prevent attacks of paralysis. In fine weather the experienced deep-water diver can, with far less exertion, raise more shell to the surface in one day than the average shallow-water man can in two. There is a



Views of the Pearling Schooners at Broome Western Australia



Wrecked Pearling Schooners After the Gale of April, 1908

deal of time lost when working in shallow water, through necessary sailing from place to place, a performance very seldom experienced in the deep water. With the allotted times for breakfast and lunch, work is carried on until sunset, when the diving gear is stowed away, sails furled, the cables changed, decks washed, and, after everything is made secure for the night, dinner is served and between eight and nine o'clock all hands are turned in. Bread is made daily, and a fair quantity of fresh fish is procurable, which is a pleasant change from the tinned stores.

Sunday being observed as "a day of rest," the boats are anchored near the schooners, although Sunday on the schooners is far from "a day of rest," it being the busiest time of the week. The crews of the various luggers congregate on board these vessels, going to and fro by means of a 10-foot dinghy. Each lugger is



Monument Erected by the Japanese in Memory of Their Countrymen Who Perished in the Hurricanes

provided with one of these dinghys, which are carried on deck during the working days. Slop chest of a great variety is sold, gear renewed and small repairs effected; in fact, the pearling schooner is nothing less than a floating store and workshop. The fleets are not bound to work at any specified place, and can change their positions at their leisure.



Pearling Schooners Getting Ready for Sea Broome Western Australia

SAILING ON TROPICAL SEAS

Harry H. Dunn

PART II

From Mazatlan to Manzanillo

AS I wrote in the last of these papers, Mazatlan is the most important port of West Mexico. It is a port of the Southern Pacific now building down far into the jungles of Tepic and Jalisco, while it gives entrance to a large amount of shipping for Sinaloa, Tepic, Zacatecas and Durango, as well as part of Jalisco.

Here good-sized cruising boats, slow and antique in pattern, can be chartered, and boatmen, such as they are, hired. There is practically no harbor, merely a protected roadstead, in which the liners of the Pacific Mail anchor, their cargoes, both freight and passenger, being brought to them by lighters.

There is a fine bay here, formed probably cen-

turies ago by the Rio Mazatlan, but now so choked by sand as to require a million dollars' worth of dredging before shipping of any size can come up to it. Power boats and large sized sailing coasters come in, but all these are of shallow draught for their breadth and length.

The Mexican Government has just expended about \$4,000,000, silver, on the harbor works of Manzanillo, and there is hope that, in the dear, dim *mañana*, the same source will contribute to the improvement of Mazatlan. The business of this port could be trebled by such an investment, and the cost would not be nearly so great as at Manzanillo.

At Mazatlan, also, the yachtsman can get everything in the way of fittings for his boat, provisions, etc. Of course, it is most desirable that one come into Mexico on his own boat. This can be done from either San Pedro or San Diego on the California coast, or from New Orleans, Galveston, Pensacola, Key West, or Havana on the Gulf of Mexico.

On the eastern rim of Mexico there are some very



The Native Yacht of the Mexican Coast and Inland Waters. The Author's Boat Was a Similar but Larger Craft



Power Boating in Manzanillo Harbor, Mexico

delightful cruises, of which I shall have something to say later. On both sides of Mexico, however, the boating is delightful, comparable only with the Inland Sea of Japan or the waters which lave the archipelagos of the South Seas.

Having left Mazatlan, one finds a number of double-mouthed lagoons and bayous along the shores of Sinaloa and Tepic. Most of these have deep enough water to float a small auxiliary launch or a good-sized rowboat, and in them the sportsman finds the finest of alligator and tiger shooting, with deer only a few hours' walk inland. It is possible to land from a small boat in almost any of these lagoons, and in

what are misnamed the "Winter" months here, there is wildfowl shooting better than the marshes of the Chesapeake in these lagoons.

"The Tiger" or *El Tigre*, of the natives, is, of course, the jaguar, but he is no mean adversary, possessing the strength of the real tiger, but the wisdom attributed to the lion, and the cunning of one of the big boa constrictors which also infest the forests of this section. One begins to get into the tropics here, and the wild life is so varied, the animals so novel, the birds so brilliant, that it is well worth while to tie up in some cove and spend a week camped ashore.

Practically all of this coast-line is uninhabited, what few Indians there are keeping to the healthier hills and valleys some miles inland. This does not mean, however, that there is danger of sickness for the visitor to these latitudes. On the contrary, if one keeps to boiled drinking water, provides for insects, both of which troubles are to be met with,—of course, inland, and not on the sea,—there is not the slightest danger of illness of any sort.

In leaving Mazatlan, the yacht must carry all her own provisions, materials for repairs, ammunition, etc. There is no port except San Blas, in Tepic, and it does not amount to anything but a collection of huts, where anything can be obtained. It is about 150 miles South from Mazatlan, and there is no good harbor, everything being taken to and from steamers on lighters, rowed by from five to seven husky Indians. The roadstead is not a safe anchorage, and the writer has run out of there on three separate occasions, to stand off a sudden squall in the open sea in preference to claiming the protection of the two or three islands which lie close to the shore in front of the town. Most of this part of Tepic is low country, and the crops are cocoanuts and bananas and such like products, all



Evening on Mexican Waters. This is the Most Delightful Time of the Day for Cruising on the Inland Waters

of which can be obtained at what seems to the Northerner extremely low prices.

Excellent hunting, for four-footed game, can be had all along the coast of Tepic, and, in fact, throughout these lower states of the West Coast. Any one who is provided with a small boat can get a few minutes' excitement and not a little danger out of each alligator he sees if he will only pump a pellet or two of lead into the saurian. If the native persuades him to hunt in a cranky Indian canoe, he may get more than excitement, for a 14-foot cayman is no small adversary in some lonely river or bayou, while the jaguar is the gamest wild cat known to the world. Its skin is far ahead of the leopard's in beauty, and compares as a trophy with that of the great striped cat of Bengal.

About seventy-five miles out in the Pacific from the port of San Blas, lie the Tres Marias Islands. To the ordinary reader in the United States, the name of these barren islets means nothing; but to criminals in Mexico they are the saddest words ever uttered by human voice. On the Tres Marias is the famed penal colony of the republic. To it are sent all criminals of certain classes from the various states of Mexico.

Escape from the islands is impossible. In all the history of modern Mexico, so thorough has been her espionage of this "rest resort" for thugs and bandits and common thieves that not one has escaped, so far as I have been able to learn. The prison system



Present-Day Method of Transporting the Products of Mexico Between Towns

is admirable, but most effective of all is the "manta" guard, which, day or night, is on duty in the waters about the islands.

The manta is a huge, flat, fishlike creature, almost four-square in outline, weighing from a few hundred pounds up to three or four tons. It resembles the tailless body of one of the great devil rays of the South Atlantic and Gulf coasts of the United States, flying through the water by moving great triangular wings on either side of its body, and thus gaining the name, among the Indians, of "sea bat."

These huge blanket fish, as foreign sailors call them, will attack any living thing in the water. Float-



Native Dugouts



Native Boats Which are Perfectly Safe for Coastwise Navigation

ing at rest on the surface of the sea, they bend their body from side to side around a fish, or a man's body, and bear it to the bed of the ocean, there to cover it with their hundreds of pounds of flesh and muscle, until, with their great, toothless mouths, they suck every particle of flesh from the bones.

All the sea in the vicinity of the Tres Marias Islands is infested with these mantas, some of them of gigantic size. No man dares go bathing even in the shallow water along the edge of the islands, much less attempt to escape from the prison. Cruising through this part of the Pacific on one of the slow sailing schooners of the region, I have seen these mantas, ten feet and more square, floating on the surface of the sea; I have seen them taken with harpoons, and only a few weeks ago a school of huge man-eating sharks alone saved a diver from death beneath a 4-ton manta. The sharks and the mantas are sworn enemies, but usually, so great is the resisting power of the blanket fish, that it can sink



Ancient Sundial, Over 300 Years Old, and Still Doing Service for a Whole Town

to the bed of the ocean before the shark can get in a fatal bite, and thus escapes the tiger of the sea.

It is impossible to visit the Tres Marias without a permit from the authorities in the City of Mexico, but one can coast past the penal colony close enough to see the lifelong home of many a poor devil who is forever shut off from the world of his fellowmen. The islands are extremely lonely, and barren-looking, but they nevertheless form one of the most rarely seen sights of the republic. Later on I shall tell of the great political prison of San Juan de Ulua in the harbor of Vera Cruz, in whose dungeons enough men have died to populate a good-sized town, but the Tres Marias is the West Coast center of punishment and is for lesser crimes than those which are expiated in the dungeons of San Juan de Ulua.

Sailing by night is one of the particular delights of these far southwestern waters. The moons of the Mediterranean were never more glorious; down silver paths along the level floor of the sea the white-winged yacht creeps on and on, not a sound breaking the perfect tropical night save the occasional splash of some huge fish as it flees the death-dealing jaws of a monster shark. Then there are hours when, the



Native Laundry

winds failing in early dawn or eventide, one's boat drifts like a ship over the wide waste of waters. Then comes music and singing and dancing on the deck—and lovemaking for the young folks, for this is the land of love, of sweet idleness, and Cupid ever finds some mischief for idle eyes to do.

Passing San Blas and the islands one follows the curving shore-line of Tepic into the wide, unsettled Bay of Banderas, where the Rio Huauchinango comes down from the Jalisco hills into the Pacific. The mouth of this bay, which is a fairly safe anchorage during most of the months of the year, is guarded by three small islands, the Tres Marietas, which being translated literally, means the "three small Marias," so-named in contradistinction to the penal islands I have already described. These islets are uninhabited save by sea birds, and pleasant expeditions can be made to them by the photographer or nature lover who cares to see hordes of feathered creatures which have not yet acquired the fear of man.

In the proper season their nests are scattered thickly over these islands, and when the eggs have hatched, the noise which arises on the approach of



The Canal Which Has Just Been Cut from the Harbor at Manzanillo into the Deep Lagoon. Thus Providing an Inner Harbor for Small Craft

an intruder is first a scream and then a roar, comparable only to the roar of the waters on the cliffs which rise sheer from the sea to form the majority six or seven islets.

On the south side the Bay of Banderas ends in the Cabo de Corrientes, which is not hard to translate into Corrientes Cape. A long bar or shoal rock runs out into the sea from this cape, and, at times, its passage is dangerous to liners, though the yachtsman in the ordinary 90 or 120-footer will pass over the reef and never suspect its presence unless he gets hold of one of the few charts which show it. One will find from here South, that, with the exception of Manzanillo, Acapulco and Salina Cruz harbors, the charting of these seas is decidedly unreliable, and a good native pilot, who has skirted the shore of this

part of Mexico, close to the water in a sailing canoe, is worth three times any salary he may demand. These Indians cannot handle a modern sailing boat, much less a power craft, and a storm terrifies them, but when they have once sailed over a bit of sea, they know it forever, and when standing beside the steersman, their directions are infallible.

Rounding Cabo Corrientes the sailor finds Punta Ipala, where a small, wet-weather river empties into the sea, and, forty miles further South, rounds Punta Rivas, where there is another small stream, and enters the Bay of Perula, which is no bay at all, but merely a small, uneven bight. Here is the village of Chamela, which likewise amounts to nothing and is not worth going ashore to see unless one wishes to purchase native supplies. It should be said that



The Harbor of Manzanillo as It Now Appears



Bringing in Lumber from the Hills. It Could Be Better and More Expeditiously Handled by Power Boats

the best tobacco in the world can be bought here at about one-fourth the prices paid in the United States. Cigarettes and cigars are good and cheap. One buys for five cents, Mexican silver, a better cigar than he can buy in the United States for ten cents, gold, and the two-for-a-quarter cigar of the southern part of Mexico cannot be beaten by any cigar Cuba ever produced at any price. Pipe and chewing tobacco, however, are unknown quantities in Mexico, so bring your supply with you.

Twenty-five or thirty miles below Punta Rivas, there is a little bight called Bahia Navidad, the Bay of the Birth, referring of course to the birth of the Child in Bethlehem. This bay is exactly on the line between Jalisco and Colima, but offers no anchorage, has no settlement other than a few Indian huts, and,



One of the Jail-Like Hotels of the Hot Country of Mexico. This is the Best Hotel of Culican, the Capital of Sinaloa

unless a person wishes to see the country as it is before any man's hand is laid on it, there is no reason to risk a landing in a small boat in the surf. The most useful thing a yacht can carry on one of these cruises is a 15-foot power boat, as light as possible and of small horse-power, say two or three at the most. With this landings can be made anywhere, and the engine saves the wear and tear of rowing, which is no light task in tropical waters.

Then there is another thirty or thirty-five miles of pleasant sailing to Manzanillo, the port of Colima and destined to be one of the principal ports for the West Coast. To it drains the commerce of Jalisco, Colima, Michoacan, and other rich states, even further inland. The harbor is one of the best in Mexico, the town one of the prettiest coastal settlements



Native Yacht in a Shady Reach on the Santiago River, Mexico

I have ever seen. Great cocoanut palms line the shore, and at their feet white, thatch-roofed houses seem to be playing hide-and-seek with the traveler's eyes. Here the water is so deep that steamers of great draught come up to the wharf and go out again under their own power, while tugs or lighters are unknown.

This is one of the busy ports of entry for Mexico, and here, as at Mazatlan, port officials will come off in their barges and make an inspection of the yacht. They are extremely polite, however, and treat all foreigners with the greatest respect, it being the common sentiment of Mexico that the nation needs for its development as great an influx of foreign money and blood as possible. Particularly is every courtesy extended to visitors from the United States, and an American is made welcome to the city. It is needless to say that provisions and outfitting materials can be obtained here, and there is in process of building, I believe, a sort of drydock or hanger, in which yachts can be scraped, a very necessary and frequent operation here owing to the prevalence of parasitical life in all tropical waters.

One of the great attractions to Manzanillo is the fact that from it one can take train to the little town of Colima and thence visit the famed Colima volcano, the only active crater on the North American continent. The mountain, which is about twenty miles from Colima, a city of 15,000 people, is low, but around it all the time hangs the cloud of its own smoke, with occasional outbursts of hot sand, rocks and ashes. Halfway up the cone is a small lake, ice-cold, and filled during the Winter season with waterfowl, furnishing fine sport for the man who cares for shooting. No one should visit Manzanillo without going on to the volcano for at least a short trip. One crater of Colima has blown out and is as dead as Popocatepetl or Orizaba, and the other fiery pit probably will die the same way within a few years. The death of a volcano is an interesting sight and the last struggles of Colima are no exception.

From pretty Manzanillo it is 300 miles or more on South to Acapulco, probably the most famed in song and story of all the ports of Mexico. Of this cruise I shall write in my next letter.

(To be Continued.)



Photo by Stebbins

A Merrimac River Gundalow

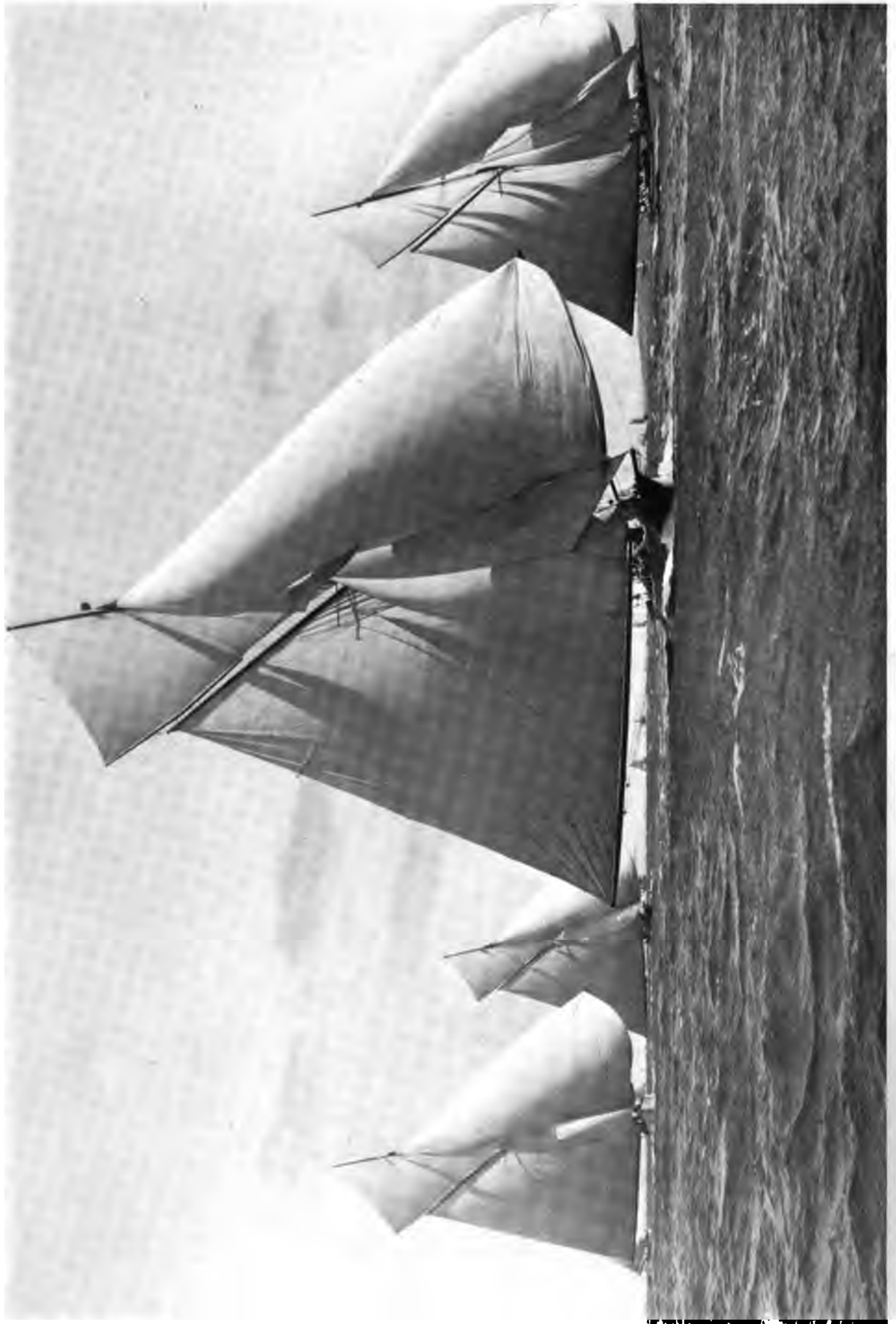
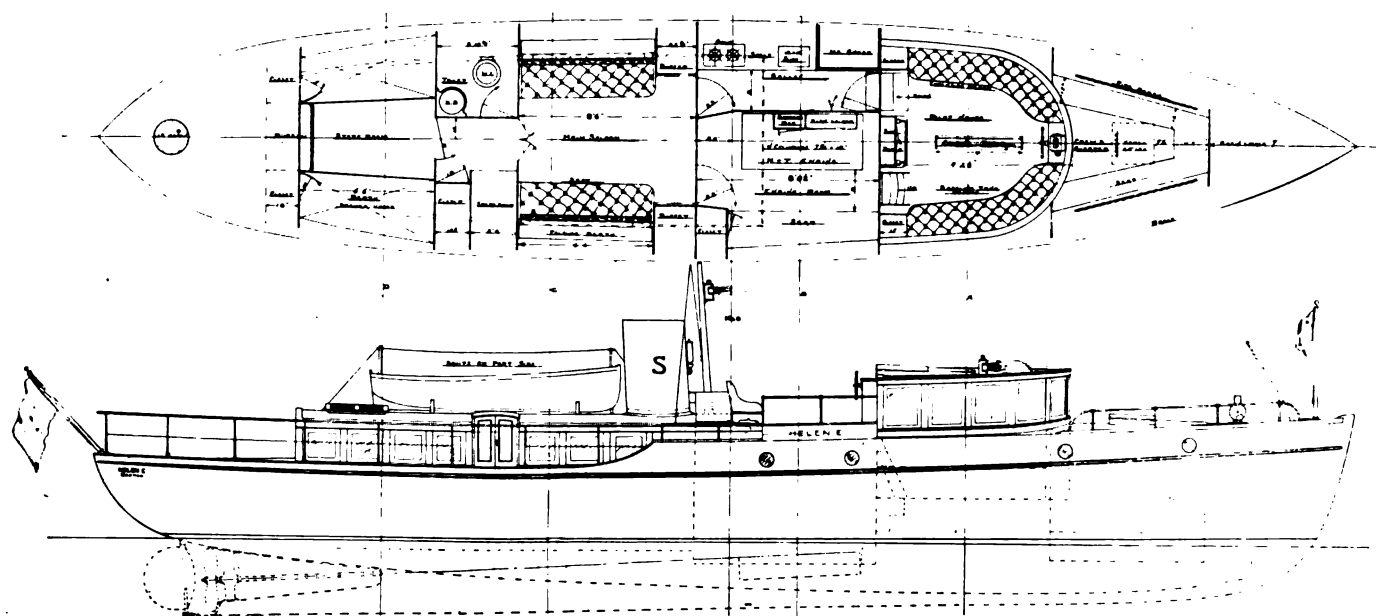


Photo by A. E. Becken & Son The Fifteen-Meter Class in a Scramble for the Line at Cowes. The Boats are Paula, Gauntlet, Sonya and Mariska



Sixty-Foot Power Cruiser Helen E. Designed and Built by Murray & Tregurtha, Boston, Mass.

HELEN E

THE photo and drawings are of Helen E, a 60-footer designed and built by Murray & Tregurtha, of South Boston, Mass., for O. C. Sanborn, of Boston.

The boat is quite heavily constructed with oak frames, and planking of $1\frac{1}{4}$ -inch hard pine. The cabin is finished in mahogany outside, with main saloon and state-room finished in white enamel with mahogany trimmings. The pilothouse is finished in mahogany throughout.

The machinery consists of a four-cylinder, 40-60-h.p. $7\frac{1}{2}$ by 10-inch Murray & Tregurtha, with the fuel tanks under the pilothouse, on each side, which gives a passageway from crew's quarters to the engine room, permitting the engineer to travel back and forward without disturbing the guests in the pilothouse or main cabin. The builders state that Helen E is one of the best all-round cruising boats they have put out and develops a speed

of 11 knots per hour; also that she has proven herself an excellent sea-boat in the weather conditions met throughout the Summer.

The owner cruised last Summer all about Cape Cod, Long Island Sound and along the coast of Maine, and speaks very highly of the boat's performance.

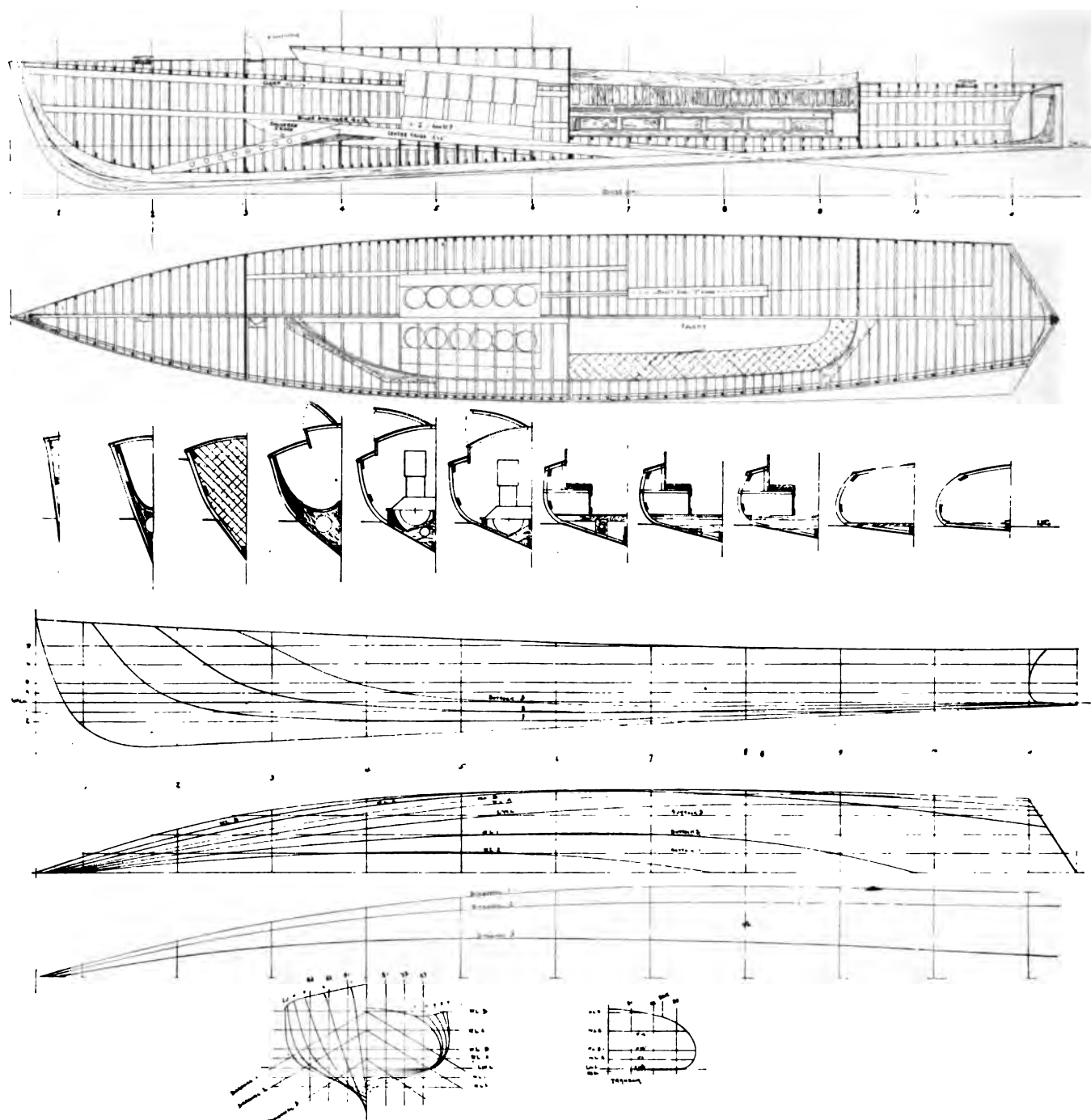
The cabin arrangement works out very well and the glass sash aft permits the maximum of ventilation while the raised deck forward provides the necessary seaworthiness.

The general dimensions are as follows:

Length o. a.	60 feet 6 inches
Length w. l.	54 " 6 "
Breadth, extreme	11 " 6 "
Breadth on l. w. l.	10 " 6 "
Draught	3 " 9 "



Helen E, 40-60-H.P. Murray & Tregurtha Engine, Owned by O. C. Sanborn, Boston, Mass.



High-Speed Fifty-Five-Foot Twin-Screw Runabout. Designed by John F. Doutney, Brooklyn, N. Y.

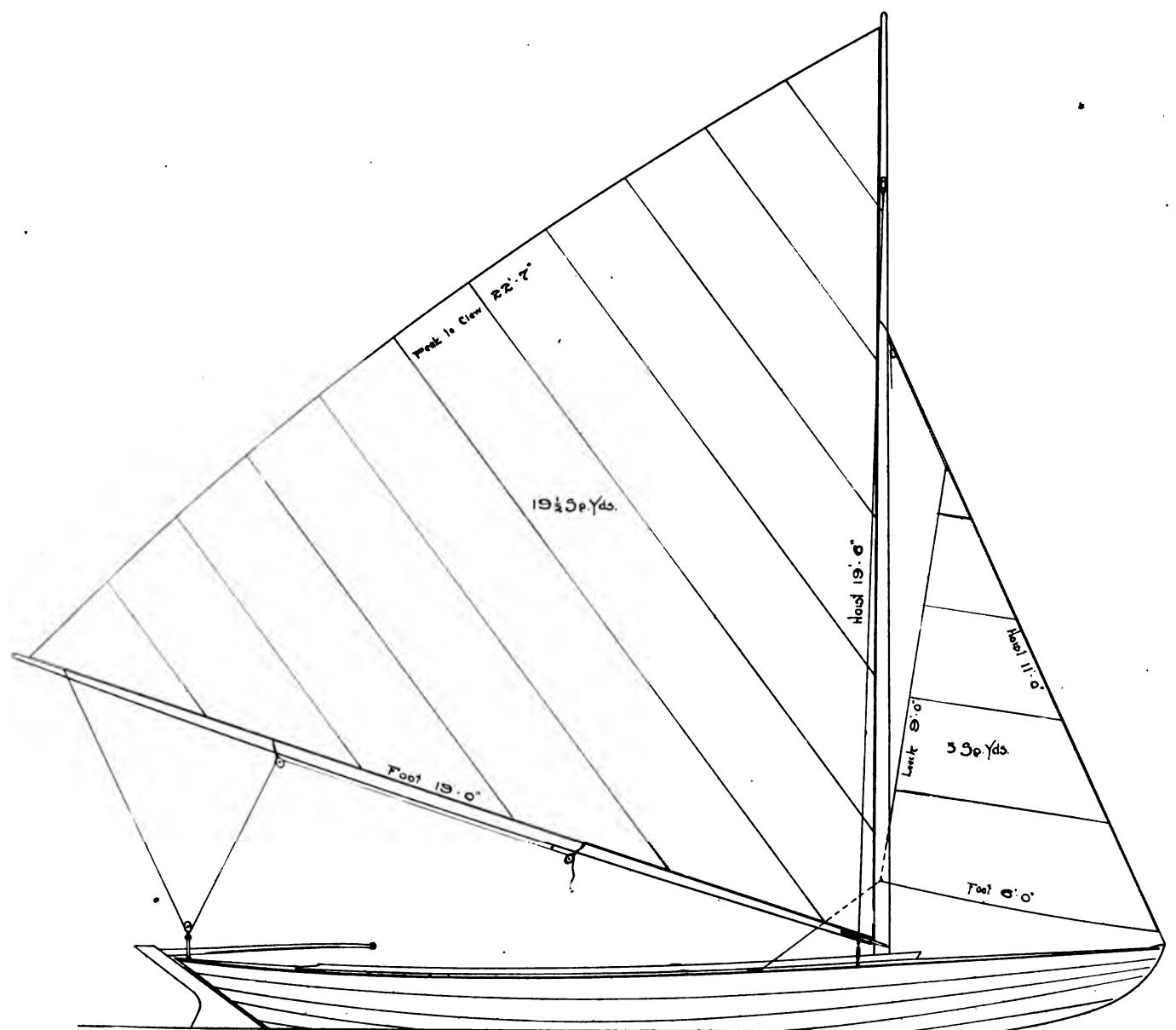
FIFTY-FIVE-FOOT RUNABOUT

THE plans above are of a boat designed by John F. Doutney, of Brooklyn, N. Y., for a New York engineering concern for use with two six-cylinder kerosene oil engines designed to develop in all 1,200-h.p. As the estimated weight of equipment was about 5,000 lb the hull necessarily had to be strong and engine beds very rigid.

The keel is one-piece white oak 8 inches moulded, 4 inches sided; frames 1 inch by $\frac{3}{4}$ inch alternating with $\frac{1}{2}$ inch by $\frac{3}{4}$ inch, spaced 6 inches centers. Planking double with seams staggered; inside plank $\frac{3}{8}$ -inch long-leaf yellow pine and outside $\frac{3}{8}$ -inch white cedar, riveted through and all sheathed on outside with composition metal 1-100 of an inch thick and polished. Deck coam-

ing and cockpit to be finished in mahogany. The boat is divided into four water-tight compartments by three bulkheads. The engine beds to be of elm 3 inches sided and moulded over frames which are mortised into same, and in center of boat is a truss 2 inches by 6 inches running from heel of stem-knee to well aft of engine space, acting as a center bed for engine, which, with side beds worked into frame and all securely fastened to web frames under engine at every foot, should make a very rigid foundation both fore and aft and athwartship.

Two fuel tanks under the cockpit seats with a capacity of 150 gallons admit of the boat being run a considerable distance at the estimated speed of 45 miles per hour.



Massachusetts Racing Dory. Designed by Charles D. Mower, Philadelphia, Pa.

The model is of the deadrise type worked into the regular rounded over-water body at the place where chines would be used, and all frames are consequently straight from keel to water-line. The keel is absolutely straight from the turn of the forefoot to the transom. Specially designed struts are fitted to keep alignment of shafts and act as protectors to propellers. The estimated cost of boat complete is \$15,000. General dimensions are:

Length o. a.	55	feet	0	inches
Length w. l.	53	"	5	"
Breadth	8	"	8	"
Draught at forefoot ...	2	"	4	"
Draught at propellers ..	3	"	6	"

SAILING DORY

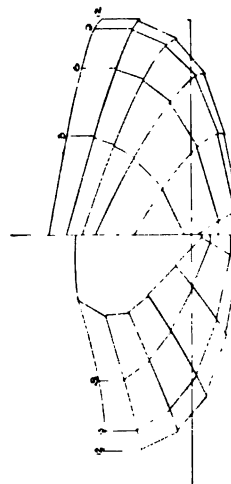
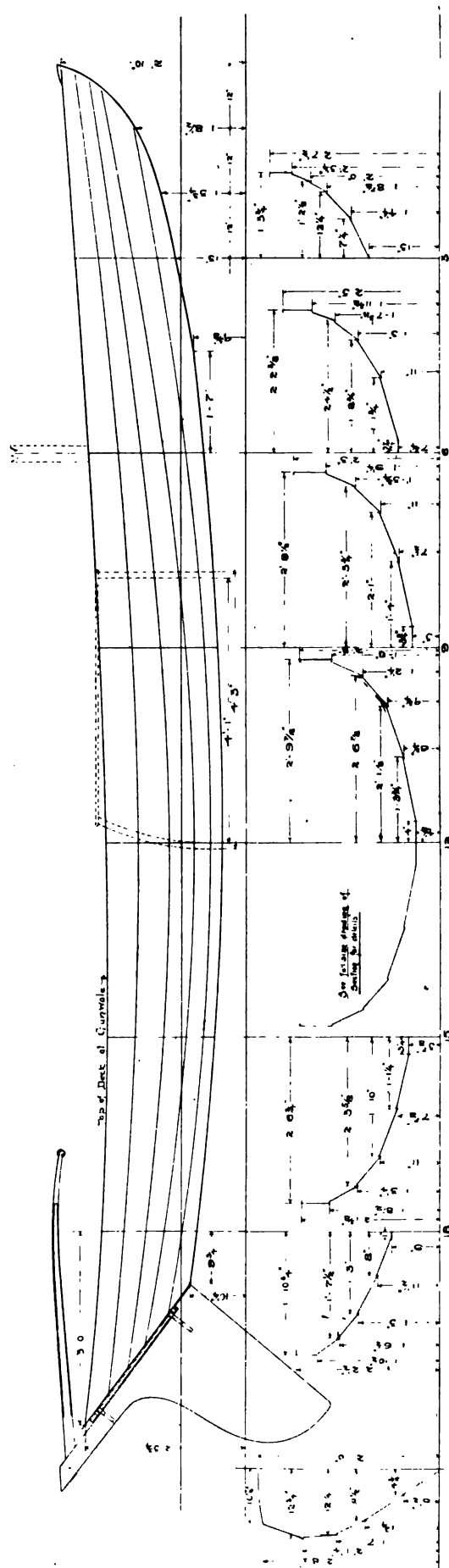
IN response to the many inquiries received for the plans of an up-to-date sailing dory, we publish herewith the plans of Mr. Charles D. Mower's latest Massachusetts racing dory.

Mr. Mower has designed a number of this type of craft which has been used extensively throughout the country, and in many cases as one-design classes.

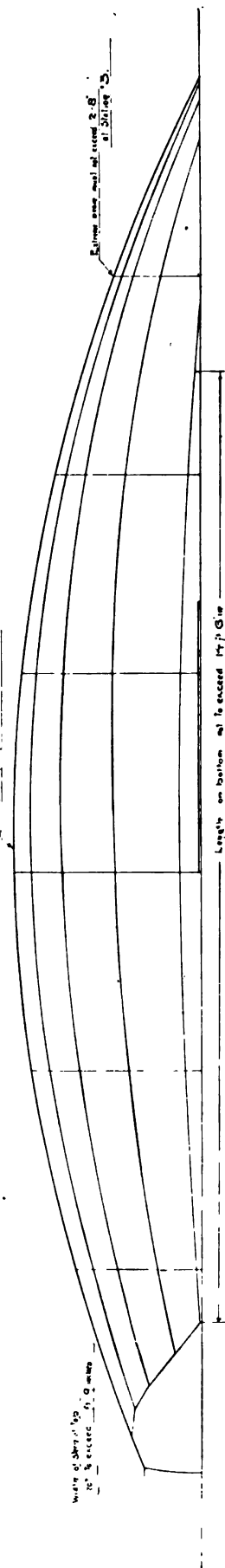
Being comparatively inexpensive, and also an able sailing craft, the dory has proven a very successful boat for day sailing and racing. The boat shown is 21 feet over all, and all the dimensions are clearly shown on the plans, together with the complete scantling and construction data.

The general dimensions of the boat are as follows:

Length o. a.	21	feet	0	inches
Length w. l.	15	"	6	"
Breadth	5	"	8	"
Draught, hull	0	"	7½	"
Draught, rudder	2	"	3	"
Draught, centerboard..	3	"	6	"
Sail area: Mainsail	19½	square	yards	
Jib.....	3	"	"	



Lines of Twenty-One-Foot Massachusetts Bay Racing Dory



Lines of Twenty-One-Foot Massachusetts Bay Racing Dory

EASY-TO-BUILD TUNNEL BOAT

ON the opposite page is shown an easy-to-build tunnel boat, designed by Mr. John Bacon Hutchings, of Louisville, Ky., for his own use as a fishing boat. Mr. Hutchings, who has designed a number of interesting small craft, writes of the boat in question as follows:

"This boat I designed to be type of launch specially suitable for fishing in shoal waters, such as are so frequently met with in coastal waters from New York to Texas.

"I have fished for a number of years on the Florida coast both east and west, and since the power skiff or launch has practically superseded the boats propelled by oars, have found from actual and often hard experience how very necessary a light-draught launch is to perfect happiness.

"I have been for years a great lover of boats, having owned many and varied types, and have designed, for use of friends and for my own pleasure, canoes, sailboats, and launches. For several years I have been very much interested in designing 'easy-to-build' launches,—launches not only easy to build but which could be built cheaply and at the same time be *almost* as speedy and seaworthy as the regular type of equal dimensions, displacement, and power. I felt that by hardening the bilge and flattening the floor the entire length of boat, making all lines as fair and easy as possible, I could attain the desired end. Working on these lines I designed several small boats much after the so-called double-wedge type with the deep forefoot and flat shallow stern, and found that they gave very satisfactory results.

"These experiments, however, led me to believe that the deep fore end was a mistake, as for the displacement it gave proportionately a very large wetted or frictional surface. I then gradually eliminated the foot, widening the forward water-line and sweeping in the bottom line with a curve that became almost a straight line from aft of amidship to the stern.

"I will confess that I was working very much by the 'rule-of-thumb,' but I did calculate the displacement, and located correctly, in most cases, the center of displacement with boat loaded to water-line. Launches built on these lines were still easy and cheap to build and proved very satisfactory in both speed and power.

"I had for some time been much interested in light-draught launches, and was fortunate enough to induce some friends to build one after my design. This launch was 24 feet and 6 feet, and drew about 14 inches of water with an 18-inch propeller. As is often the case among amateur builders, my friends, while building a very good boat, failed in many essentials to follow absolutely my drawings. This was especially so in the tunnel, the after curve of which was so quick that it necessarily interfered with much of the water thrown from the propeller and of course impeded the speed of the boat; but with these drawbacks the boat made about 9 miles per hour with a 12-h.p. engine—very satisfactory results, I thought.

"The success of this led to the design that I am sending you. You will note that with the engine placed at either of the positions shown, the curve of tunnel is such as to allow easy clearance for water thrown back by propeller, a point of great importance. Also that curve of tunnel ends about 2 inches above assumed water-line. This is very necessary in a boat of this size, as by moving aft when starting engine, the stern will sink sufficiently to cover tunnel and make same air-tight, and after head-

way is gained occupants of boat will return to their proper places and stern will regain its correct position, which will allow proper clearance of water from propeller.

"Mr. Yarrow, the father of tunnel boats, used a movable flap for his commercial boats and any boats of large displacements to attain the same end, lowering the flap while getting underway and raising it to several inches above the water-line when once fairly started. His experiments show an increase of speed of from 10 to 12½% by use of a tunnel of this type over one submerged at all times.

"I am convinced that my design will make from 6½ to 9 miles per hour with engines of from 2½ to 6-h.p., but believe that for all practical use as a fishing launch, a light engine sufficiently powerful to turn a 12-15 propeller 700 r.p.m. would be about right, and should develop a speed of from 7 to 7½ miles. The boat with an engine of this kind and with two men and ordinary outfit, should not draw more than 9 to 10 inches, and could be easily worked over bars with only 6 or 7 inches of water, and one should be able to go anywhere that an ordinary skiff could, and of course cover, without fatigue, a vastly greater territory.

"As the design shows, the boat is very easy to build—in fact, the easiest of all practical types; but I wish to impress upon any amateur who wishes to build from these lines the necessity of using every possible care to fit the planking perfectly so as to have a thoroughly *tight* boat, a leaky one being an abomination and a continual source of annoyance and discomfort.

"I will not describe the methods of construction, details of engine bed, etc., as there are many methods that can be satisfactorily followed, all of which have from time to time been carefully described and detailed in THE RUDDER; but I would suggest that any one building keep in mind that 'a thing worth doing is worth doing well.'"

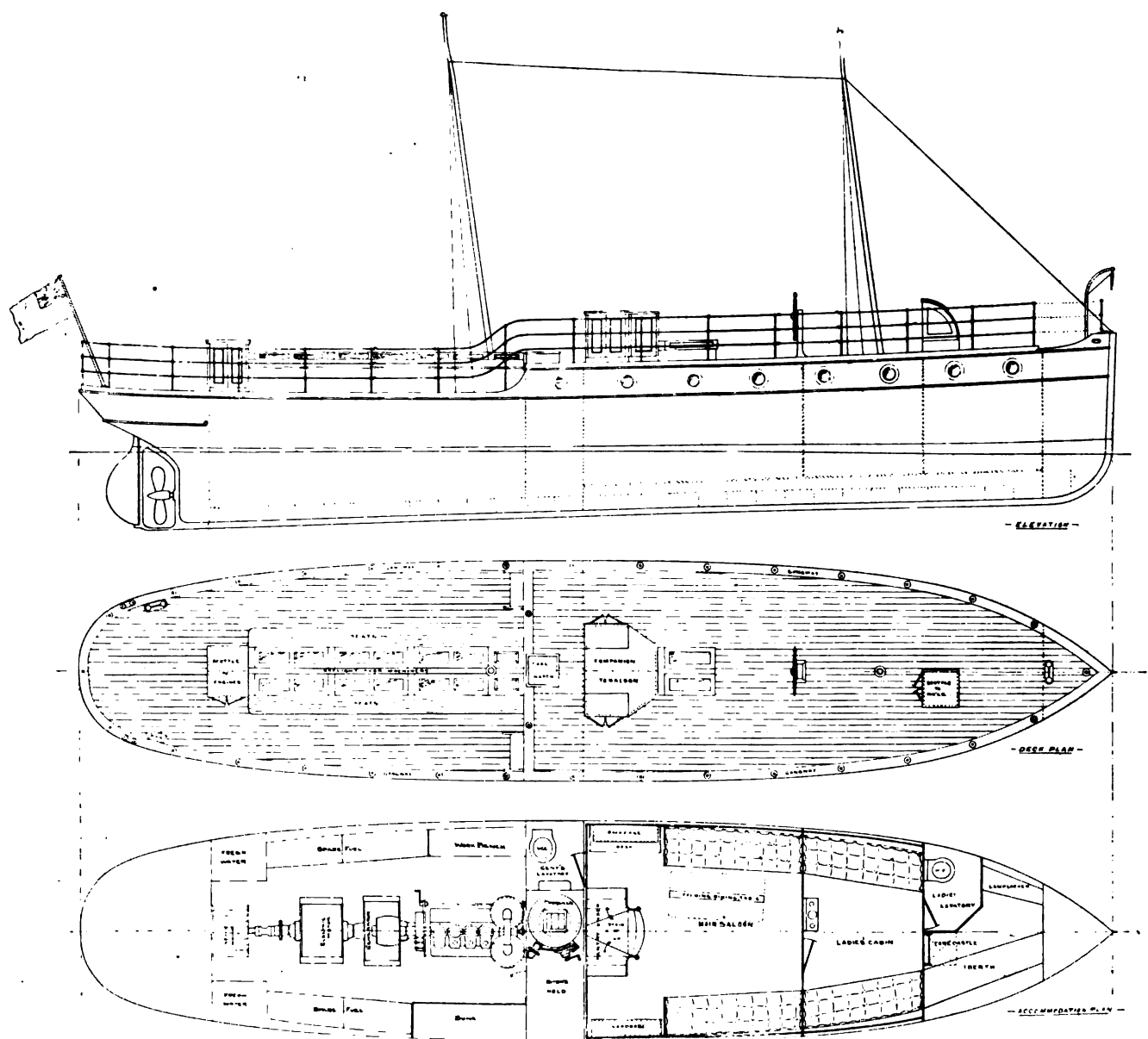
FIFTY-FOUR-FOOT PRODUCER GAS YACHT

THE following plans show a steel 54-foot power yacht designed and built by MacLaren Brothers, Ltd., Dumbarton, Scotland, for Mr. H. Mavor. The boat is built to Board of Trade requirements and can be used either for passenger service or for private use as a yacht. The boat is equipped with a 60-h.p. producer gas plant and in order that the best efficiency of the propeller may be obtained the power is transmitted through an electric motor. The general dimensions of the boat are 54 feet over all, 11 feet 6 inches breadth, 7 feet 4 inches depth, and 4 feet draught. The scantling dimensions are shown in the midship section on page 153 and the following description of the type of power plant with which the boat is equipped was furnished by the builders.

"A gas producer is in principle a very simple apparatus, and has been described as a hole to put coal in. Provided the depth of the incandescent fuel is about 27 inches, and through this a column of air is made to pass either by suction or by pressure, it is impossible not to get gas at the outlet of the apparatus.

"When a current of air is passed through the generator furnace of sufficient incandescence there is always a gas produced, of which the principal combustible is carbon monoxide, which, however, is impoverished by all the nitrogen present in the air which has been used for the production of the gas.

"Speaking generally, all the carbon is burnt to CO,



Fifty-Four-Foot Producer Gas Yacht. Designed and Built by MacLaren Bros., Ltd., Dumbarton, Scotland

instead of CO_2 . In reality the operation is completed in two steps.

"In the presence of an excess of oxygen, carbon dioxide is formed in the lower portion of the apparatus, but this gas is afterwards decomposed into carbon monoxide, when it is brought into contact with a still further quantity of incandescent carbon, but this incomplete combustion disengages 4,360 B.T.U. per lb of carbon consumed. Complete combustion of CO_2 gives 14,600 B.T.U., the production of carbon monoxide thus occasioning a loss of about 30% of heat contained in the fuel, i. e., efficiency of apparatus=70%. When used in connection with a furnace it cannot be said that any heat loss occurs. But when required for power purposes, owing to the fact that cold gas must be employed, it is imperative to recover as much as possible of the 30% of the heat disengaged by the formation of the carbon monoxide. This is an important item for consideration when designing producers.

"By permitting the decomposition of a certain quantity of water vapor by the furnace, a large amount of

heat, in proportion to weight in water, is absorbed, and hydrogen is set free. Carbon monoxide is also produced as a result of the reaction of the liberated oxygen with the carbon, but no nitrogen is added.

"Discovery of this was made by the accidental placing of a pan of water below a producer to catch the ashes falling from the fire-bars, when a marked improvement was noticed in the working of the producer.

"All other substances susceptible to reduction by the absorption of heat in this manner could equally well be employed. Carbon dioxide gives from this point of view some very good results if the gas is cheap to obtain, and what cheaper source than from the exhaust gases of the engine?

"In the opinion of the writer the gas to be preferred for motive power is that obtained by the partial combustion of carbon in a producer.

"Trouble in preignition in paraffine engines is aggravated as powers are increased. The explosion is so violent that a nasty hammering action is set up, and to rectify this, water has to be injected into the cylinders.

"This, besides being a wasteful procedure thermodynamically, hardly cures the troubles, as this water has to be varied in amount to maintain the smooth working of the engine. This the writer attributes to the large number of hydrocarbons in the nonhomogeneous paraffine, each of which demands different treatment, and it is, therefore, impossible to arrive at any definite rate of water supply.

"As an example of a hydrogen fuel, take petrol, which is perfectly homogeneous, but being so rich in hydrogen it is impossible to get it to combine with the requisite amount of air for its complete combustion, with the result that the products of combustion leave the cylinder after the explosion at quite a bright red heat. This evidently is a source of great waste, but yet it is difficult to see how it is to be avoided, for hydrogen requires so much oxygen for complete combustion that its work is done before it has time to quite unite with it all.

"This hot exhaust is a source of great inconvenience, since it has to be water-cooled to prevent the exhaust pipes from burning out, and also setting fire to surrounding woodwork, and what is also important to obtain—a silent exhaust.

"No gas requires so little air for its complete combustion as producer gas, which combines with the air

water and the loss to exhaust. Another great advantage is the greater flexibility in the running of the engine.

"To kindle the fire place some oily waste in the fire-bars, then some shavings and sticks, and then a bucketful of coal; repeat this, having a double layer of each, allowing about 5 inches depth of coal, and then apply a light.

"Close the door above the fire-bars, see that the water is in the water vessel to the right level, and that there is none in the ashpit. Satisfactory natural draught will soon have the fire ready to receive sufficient coal to half fill the producer. After the engine has been looked to and oiled, the ashpit door may be closed, and the fan can be put into operation for a few minutes, and then the producer filled, when gas will be ready for passing through the scrubbers. On the gas at the outlet being transparent, a test can be made of the gas, and on the appearance of a good blue flame the gas may be turned on to the engine. The fan should be kept going until the gas is underway, then the air door to the vaporizer should be opened and the fan put out of action. As the gas is enriched by the supply of hydrogen from the water, the engine will take up its load, and the water supply must be turned on to maintain the level in the water vessel.

"Although the different operations taking place in a producer plant take some time to describe, in reality they all proceed automatically, so that given 15 minutes in order to get the producer underway, the installation requires no more attention than an ordinary engine working on petrol. The saving on the fuel bill is very pronounced, the relative costs for running the power boat Pioneer, for instance, per hour on petrol at 1s. per gallon=2-6d., on coal at 20s. per ton=2½d.

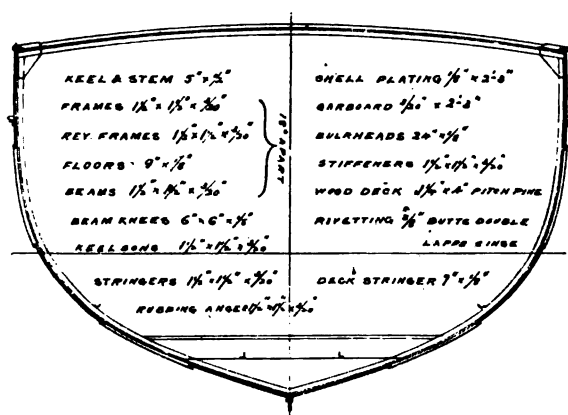
"Since the fuel burned is a quarter that used on a steam plant, there is a very great future before the marine producer and internal-combustion engine in powers up to 500-h.p. working on the suction principle.

"It should be specially noted that steam launch installations are not nearly so efficient as large marine plants, so that there is a saving in small power craft of 75% in the coal consumed by weight, and although anthracite may be dearer than ordinary steam coal there still remains the saving of 50% on the fuel bill.

"Once underway the power is transmitted to the propeller in a unique fashion. To get the highest efficiency and power out of an internal-combustion engine it is necessary to run at a high speed; to get the same out of the propeller it is necessary to drive it as slowly as possible; the draught of the boat alone limits the size of the propeller.

"By coupling the gas engine to a dynamo the former always runs full speed while the current drives a motor running normally at half the speed of the dynamo. The propeller thus runs normally at a very efficient speed. Further when half speed is required, by a simple contrivance, the invention of Mr. H. Mavour, the engine can at once be run at quarter speed of the dynamo. Thus the boat can be driven at various speeds while the gas engine runs steadily on at full speed—a very suitable arrangement, indeed, where producer gas on the suction principle is employed.

"Further, a valuable feature about this method of power transmission is the suitability of control from the bridge. The steersman on this boat has absolute control over the movements of the ship and does not require to transmit them through driver, causing at the best loss of time and a certain degree of uncertainty.

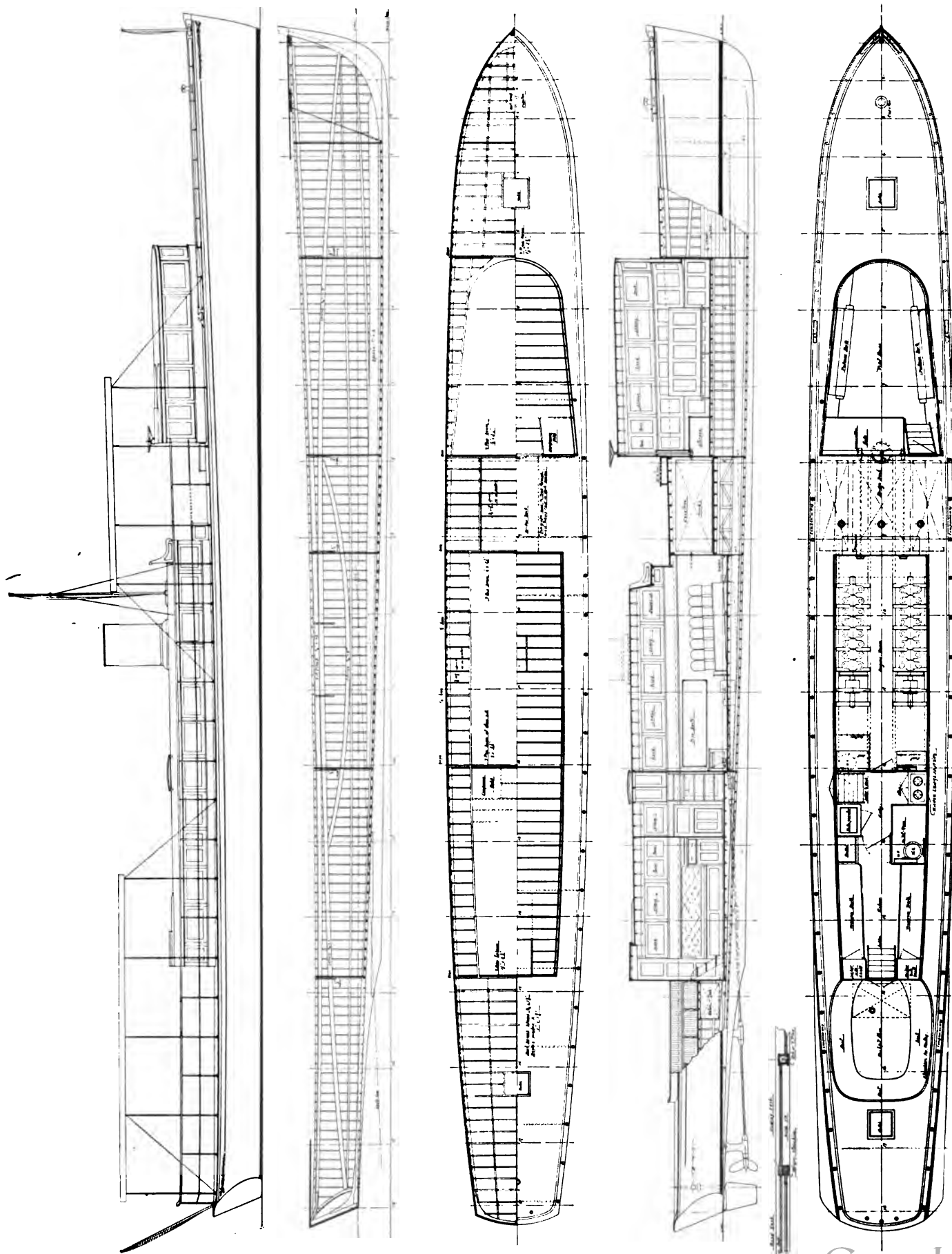


Midship Section of Steel Producer Gas Yacht

without any great explosive violence, omitting a comparatively cool exhaust, and rendering the running of the engine more like that of a good triple-expansion steam engine.

"Herein consists one of the great economies of producer gas. The supporter of combustion in all internal combustion engines is air, which consists of one part oxygen to four parts nitrogen. In all gaseous explosions there is a great waste in the heating of this nitrogen, which constitutes the greater part of the exhaust gases, so that the less air used to give complete combustion to the fuel, the less heat is lost at the exhaust.

"Again, when the explosion takes place in a cylinder the speed of the piston is unfortunately at a minimum, the crank being at dead center, with the result that the products of the combustion are unable to absorb all the heat liberated by the explosion fast enough, and the heat requiring to find an immediate outlet finds it in the cooling water round the head of the cylinder. A violent explosion is, therefore, a bad thing thermodynamically as well as from the mechanical point of view. So that in the producer gas engines we have a saving in the two most important directions, namely, the loss to cooling



Eighty-Four-Foot High-Speed Ferry Launch. Designed by Roger M. Haddock and Built by the N. Y. Yacht, Launch and Engine Co., for J. R. De Lamar, of New York City

HIGH-SPEED FERRY LAUNCH

THE high-speed ferry launch shown on the opposite page was designed by Roger M. Haddock, of New Rochelle, N. Y., for Mr. J. R. De Lamar, of New York City.

The frame of boat is of white oak steam bent; keel of same material, and planking of white cedar, double planked, finished 1 inch thick and fastened throughout with copper nails riveted over burrs.

While light in construction for a boat of these dimensions, the frame is well trussed and rigidly tied by longitudinals so placed as to take up all hogging stress, and the hull is divided at frequent intervals by transverse bulkheads of the double diagonal type stiffened by light angles, which provide a very rigid structure.

A very exceptional flare has been given to the forward sections, which are fine and sharp for some little way above the water-line, so that the boat can be driven at a high speed through the chop and swirl occasioned by the eddies and commercial craft met with in the East River, in New York harbor, without throwing spray all over the boat, or necessitating a reduction in the speed. The hull was built by the New York Yacht, Launch and Engine Co., of Morris Heights, N. Y., and is an exceptionally fair and fine piece of work into which has been put the best of material and skilled workmanship. The painstaking of the builders showing in the exceptional fair hull that they have produced.

The two eight-cylinder engines, which drive twin-screws, are the product of the Jencick Motor Manufacturing Co., of Port Chester, N. Y., and were built specially for this boat. The material used in their construction being the very best obtainable here or abroad, while the character of the workmanship and careful design is amply shown by the power developed, smoothness in running and lack of vibration—a condition too commonly found in engines of this size when running at high speed. The engines are 7½-inch bore

and 7½-inch stroke and are equipped with an air-starting device, Bosch ignition system, and all up-to-date fittings. Owing to the lateness of the season the boat was overboard but a few days and there was no opportunity to tune up the engines or to try out different wheels; but with the engines turning at 650 r.p.m. a speed of 26 miles was attained. With the engines running at 900 r.p.m., which is their normal rate to develop their full power, a considerable increase in speed is looked for by the designer and engine builder.

While primarily the boat is for day service as a fast ferry, there are accommodations for quite a party for short cruises, as there are two Pullman berths and a sofa berth in the pilothouse, and two berths in the main saloon. There are also provided two pipe berths in engine room, and two berths under the after deck, which is used as a forecabin.

General dimensions are as follows:

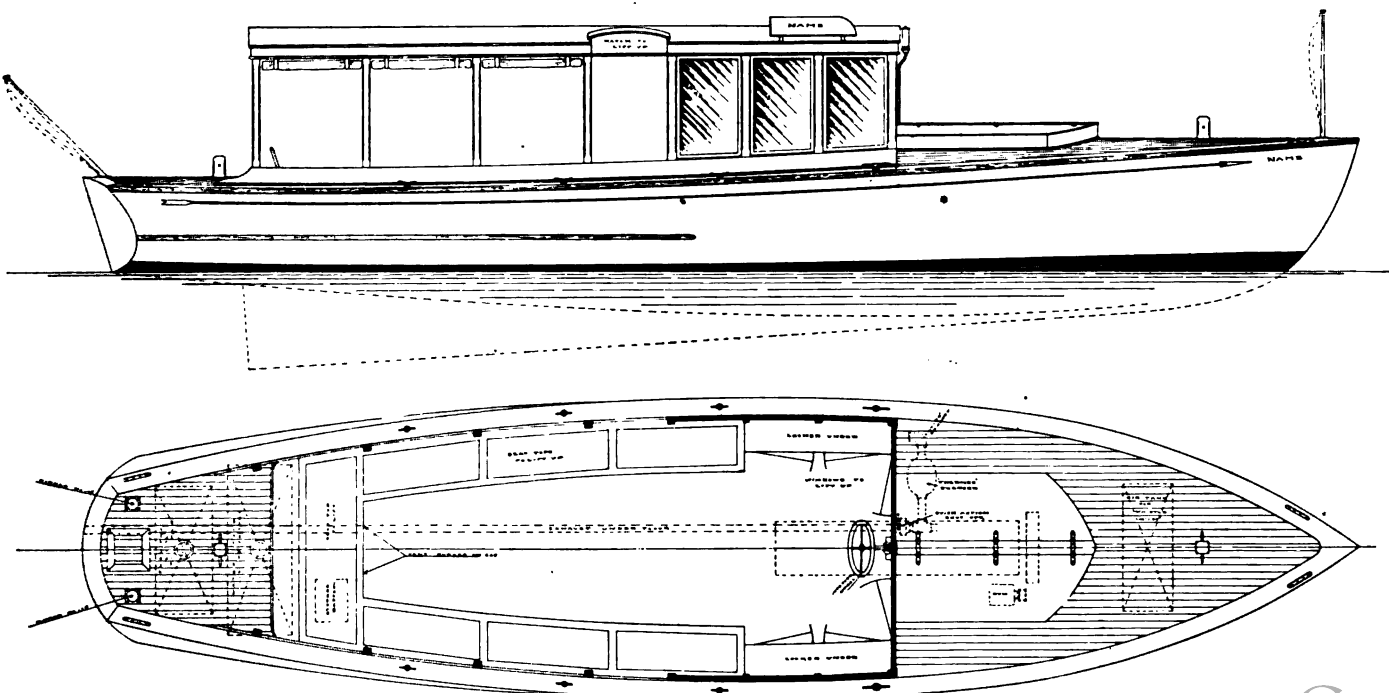
Length o. a.	84 feet	2 inches
Length w. l.	81 "	9 "
Breadth, extreme	10 "	0½ "
Breadth, w. l.	8 "	10½ "
Draught	3 "	2 "

THIRTY-FOOT DAY-BOAT

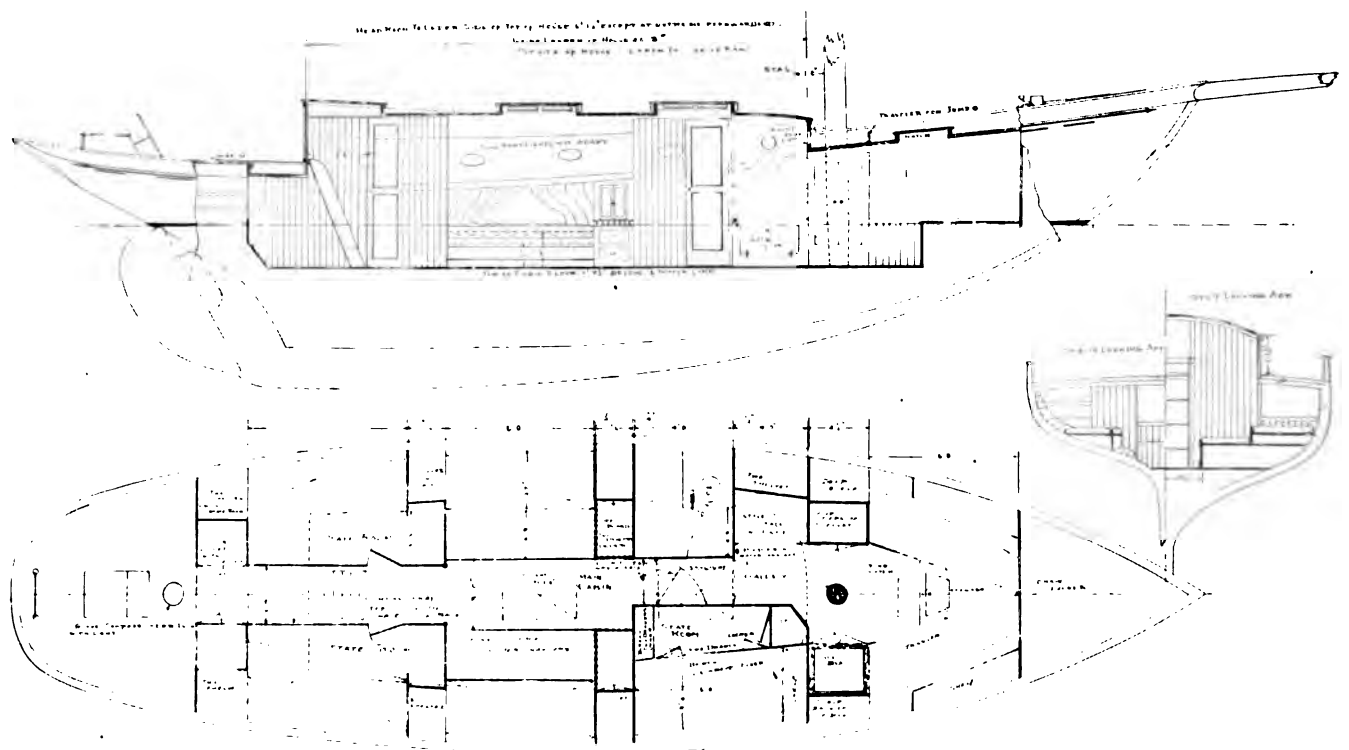
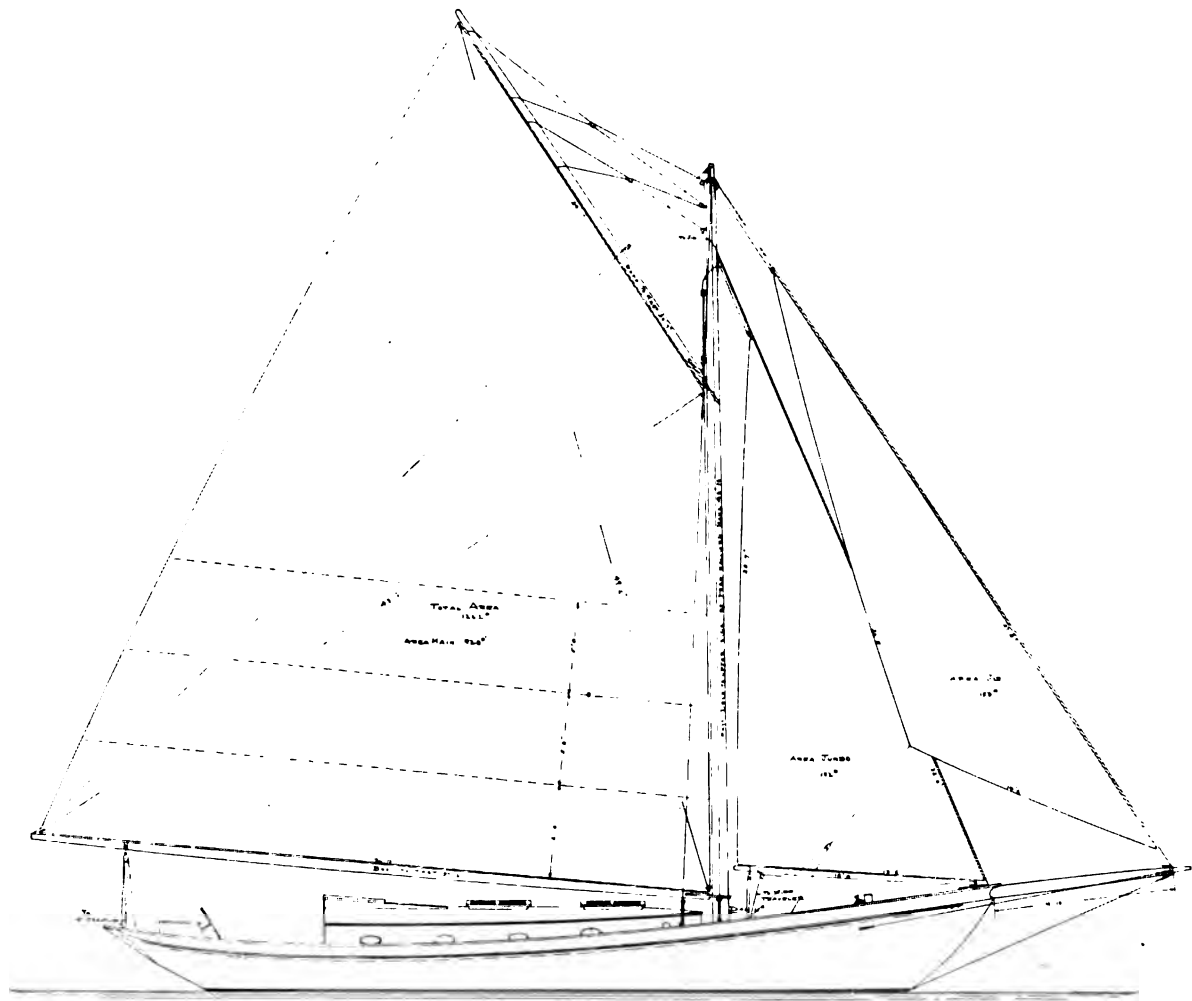
THE 30-footer shown herewith was designed by Morris M. Whitaker and built, equipped and engined by the Fay & Bowen Company of Geneva, N. Y. The craft was designed and constructed according to the ideas of her owner, Mr. C. I. Cragin, of Philadelphia, Pa., for use on Lake Worth at Palm Beach, Fla.

The engine is a three-cylinder, 17-h.p. machine and the boat is equipped with a complete electric lighting equipment also furnished by the builders.

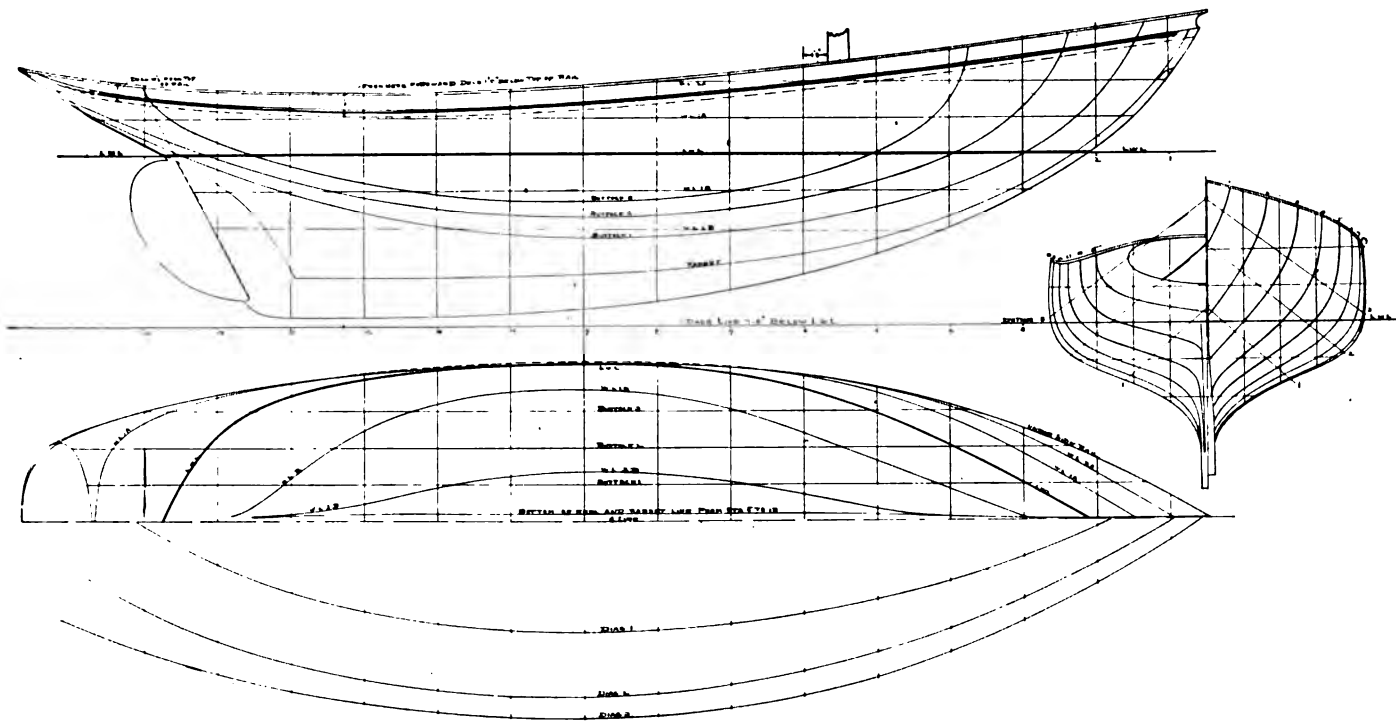
It will be noted that the engine is located under the forward deck, wholly outside of the accommodation space yet easily accessible from the deck by means of hatches and through the doors in the bulkhead between engine space and standing room.



Thirty-Foot Launch. Designed by Morris M. Whitaker, and Built and Engined by the Fay & Bowen Co., Geneva, N. Y.



Forty-Eight-Foot Auxilliary Sloop. Designed by John G. Alden for Charles A. Russell of New York City



Lines of Forty-Eight-Foot Auxiliary Sloop

FORTY-EIGHT-FOOT AUXILIARY CRUISING SLOOP

THE accompanying plans show a 48-foot over-all auxiliary cruising sloop designed by John G. Alden, of Boston, Mass., for Charles A. Russell, of New York City, who desired an able comfortable cruiser of the Gloucester fisherman type.

The lines are full and powerful and the boat should be able to go through in comfort most severe weather. There will be about six tons of iron ballast, all of which will be inside insuring a dry and easy motion in a seaway. If this were of lead it would be possible to lower the cabin floor somewhat, also lowering the house correspondingly.

The interior is drawn from ideas of the owner and

shows three staterooms, a large main cabin, a large toilet, and galley and forecabin with two berths. The headroom is 6 feet 2 inches throughout, and there is nearly 5 feet of headroom forward under the deck.

The general dimensions are as follows:

Length o. a.	48 feet 6 inches
Length w. l.	38 " 0 "
Breadth	13 " 0 "
Draught	6 " 9 "

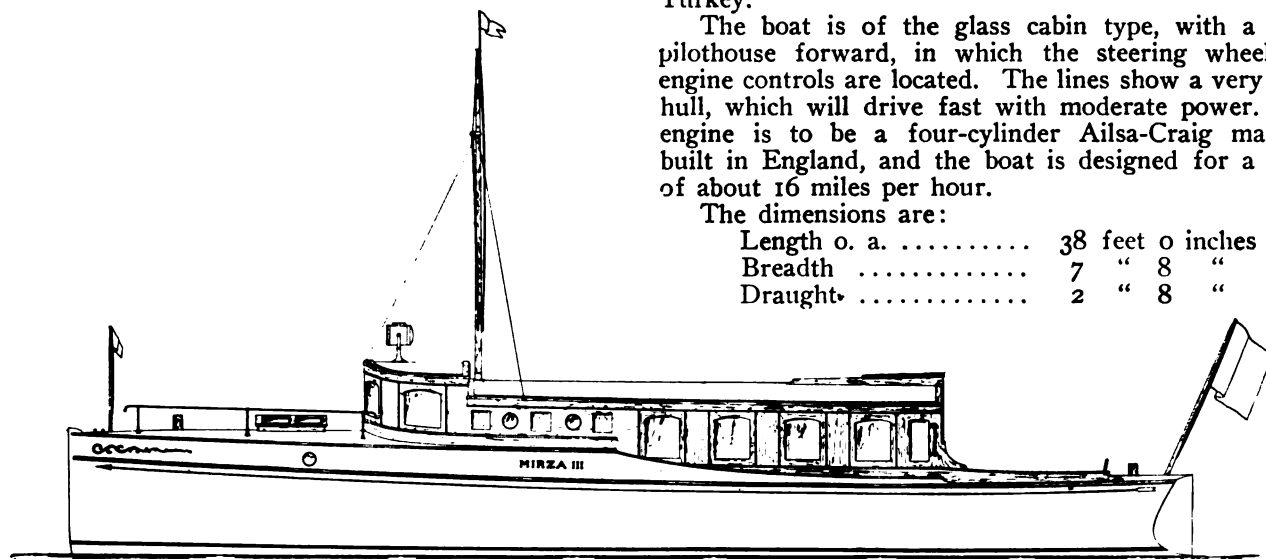
MIRZA III

THE accompanying plans show a 38-foot power cruiser designed by Wm. H. Hand, Jr., of New Bedford, Mass., for Mirza Mohammed Assaf of Constantinople, Turkey.

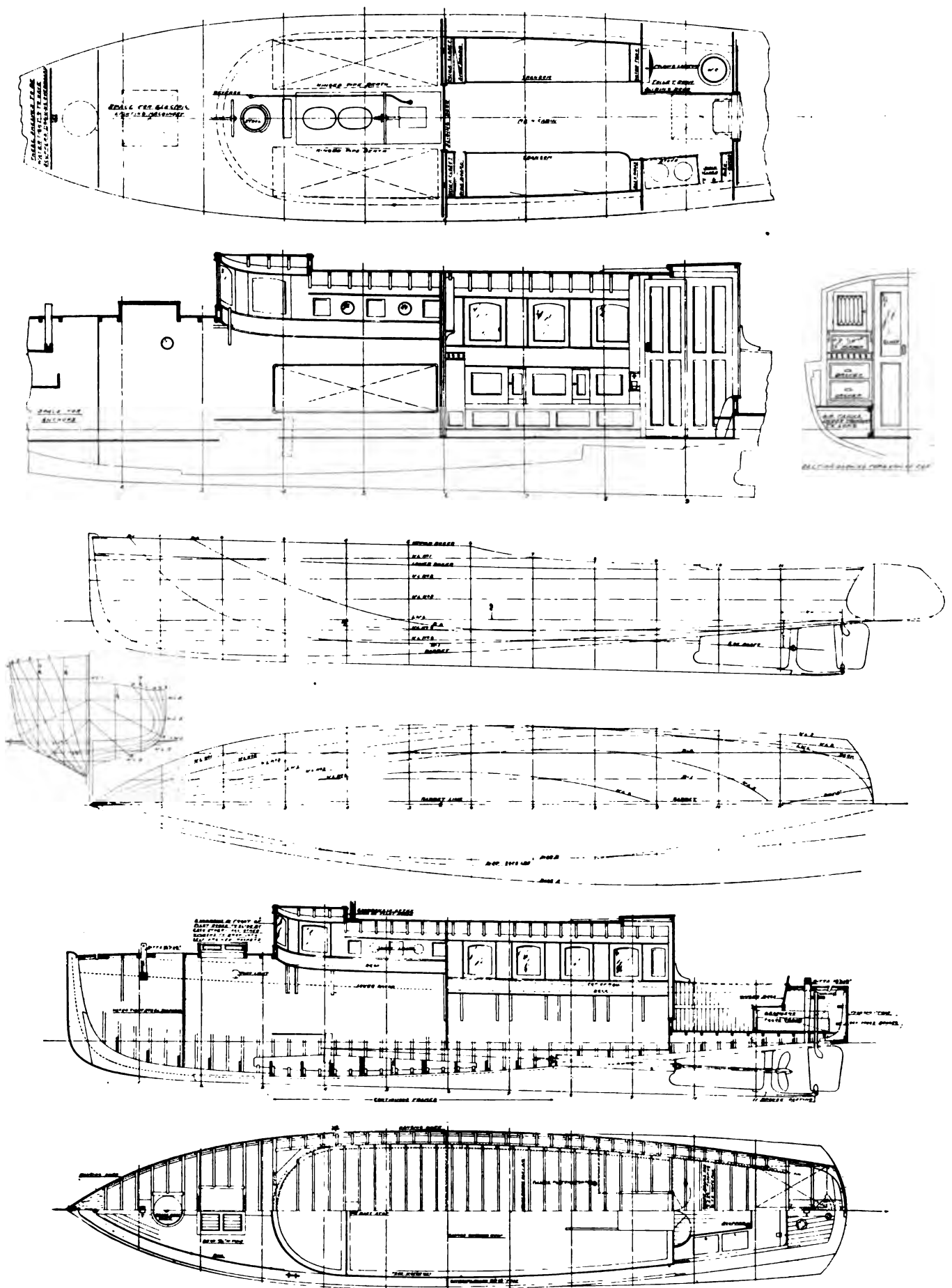
The boat is of the glass cabin type, with a small pilothouse forward, in which the steering wheel and engine controls are located. The lines show a very clean, hull, which will drive fast with moderate power. The engine is to be a four-cylinder Ailsa-Craig machine, built in England, and the boat is designed for a speed of about 16 miles per hour.

The dimensions are:

Length o. a.	38 feet 0 inches
Breadth	7 " 8 "
Draught	2 " 8 "



Thirty-Eight-Foot Cruiser. Designed by Wm. H. Hand, for Mirza Mohammed Assaf, of Constantinople, Turkey



Accommodation Plans and Lines of Thirty-Eight-Footer Cruiser. Designed by Wm. H. Hand, Jr.

KATHMAR II

KATHMAR II was designed to replace a craft of the same name designed and built for Robert T. Fowler, of New Rochelle, N. Y., by the Luders Marine Construction Company, of Port Chester, N. Y., which firm has the contract for the new boat.

This boat is to be a cruiser with a fair turn of speed, about 11 knots, and will be used mostly on Long Island Sound.

The construction of the hull presents no unusual features; it will be planked with yellow pine over an oak frame, copper fastened throughout, substantial construction being considered more essential than lightness. The engine, a six-cylinder, 50-h.p. machine, is located forward in the combined forecabin and engine room, where space is provided for a crew of three to bunk; 300 gallons of gasoline is carried under the bridge deck in copper tanks set in pans with drip-pans draining to the sea.

A double thick water-tight bulkhead separates the owner's quarters from the crew and engine space. This of course practically eliminates the noise and odors from the engine room and in addition adds greatly to the rigidity of the structure.

The galley, right across the ship, has an ice-box of 400-lb capacity, dresser and sink, and provision is made for installing a range with smoke pipe leading up the stack. A hatch to galley for the cook is also an emergency escape for the owner's party in case of necessity.

The main saloon and after stateroom are to be finished in white enamel with African mahogany beams, trim and doors; these two rooms are separated by a vestibule, finished entirely in solid African mahogany rub-

bed to a dull gloss, from which the companion stairs lead to the side deck. The toilet room, with porcelain bowls and nickel-plated trimmings, is conveniently located at the foot of the stairs. Large linen lockers and wardrobes are provided with a suit-case space under the stairs.

All the rooms will be illuminated by electric lights of the Tungsten variety, with dynamo and storage batteries located forward. A complete system of call bells with annunciator is to be installed.

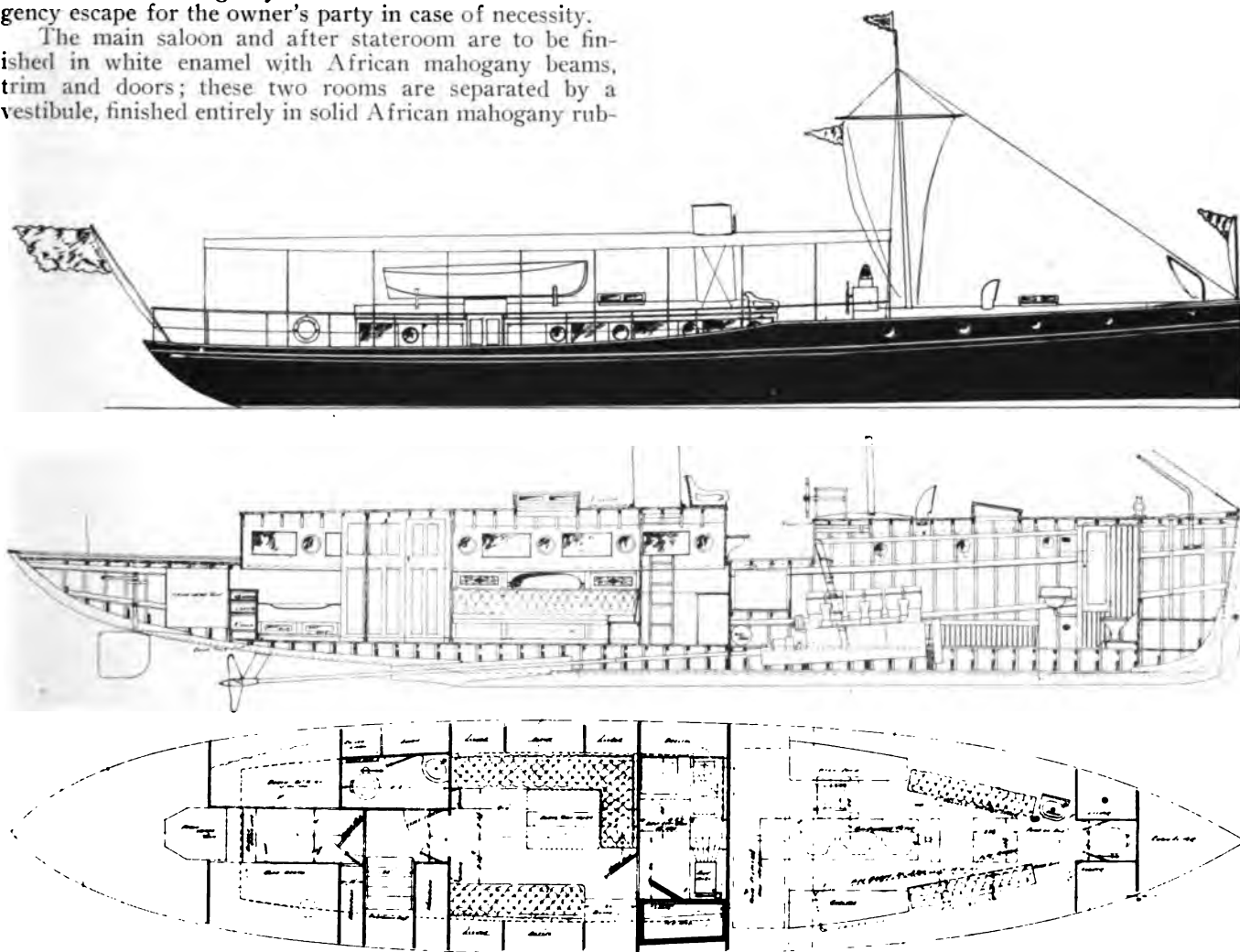
The deckhouse is to be constructed of mahogany with large special ports and fixed glass sash alternating along the sides.

A rail and awning will be carried right around and over the owner's quarters. An observation seat on the house top presents an attractive vantage point. The machinery will be entirely controlled from the bridge deck. A crew of two will ordinarily be carried.

Fresh-water tanks are of large size; the gasoline supply is sufficient to run the boat 500 miles, and with this radius and the ample accommodation for crew and owner, it is expected that this boat will make an ideal craft for extended cruises.

The general dimensions are as follows:

Length o. a.	55 feet
Breadth	11 "
Draught	4 "



Fifty-Footer. Designed and Built by Luders Marine Construction Co., for Robert T. Fowler, New Rochelle, N. Y.

FORTY-FOOT CRUISER

THIS boat was built last Spring for a New York owner, from designs by Carlton Wilby of Detroit, and is a good example of the bridge-deck type, which has become so popular of late.

The plans show the side planking carried up to the raised deck forward, giving good freeboard at the bow where it is most necessary, and providing headroom of 5 ft. 6 in. in the forward cabin. This cabin is fitted with two permanent berths raised about three feet above the floor, with lockers under. Engine is located under the steering bridge, and controlled from this point.

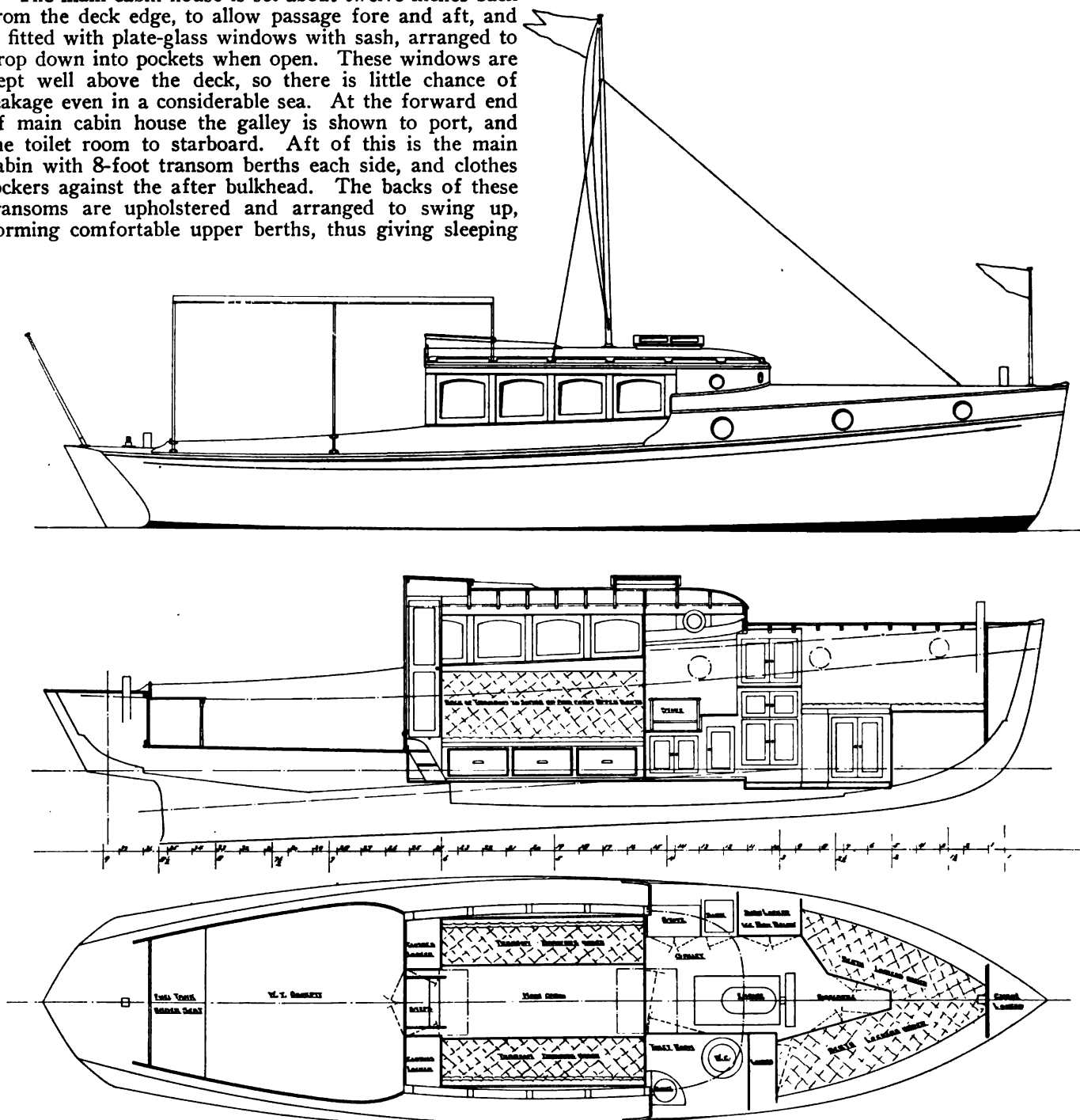
The main cabin house is set about twelve inches back from the deck edge, to allow passage fore and aft, and is fitted with plate-glass windows with sash, arranged to drop down into pockets when open. These windows are kept well above the deck, so there is little chance of leakage even in a considerable sea. At the forward end of main cabin house the galley is shown to port, and the toilet room to starboard. Aft of this is the main cabin with 8-foot transom berths each side, and clothes lockers against the after bulkhead. The backs of these transoms are upholstered and arranged to swing up, forming comfortable upper berths, thus giving sleeping

accommodations for six persons. Headroom in main cabin is 6 ft. 3 in. in the clear.

Aft of the main cabin house a water-tight self-bailing cockpit is shown, with seat across the after end. The fuel tank will be installed under this seat, where it is easily accessible for inspection, and in case of leakage it will be impossible for gasoline to get into the boat, as it will drain overboard through the cockpit scuppers.

The principal dimensions are:

Length o. a.	40	feet	8	inches
Length w. l.	37	"	8	"
Breadth	8	"	5	"
Draught	2	"	6	"



Forty-Foot Cruiser. Designed by Carlton Wilby, Detroit, Mich.



WELL, here is the clock around at March again and here is a fine fleet of the fickle ones behind the breakwater all ready to change papers. It seems to me that some of the old girls come back year after year, but there are many new ones, and comely: and most of the new ones are faster than the old, and things, other than the winds of heaven, keep them going.

Every year the fascination of the "Want and For Sale" takes hold, and as the ads begin to come in, I eagerly skim through for old friends and new acquaintances. Some reappear year after year, simply because they are out of their true environment, due perhaps to somebody's mistaken idea of conditions. Here, for instance, is a good, solid old hooker with a draught of 9 feet trying hard to be efficient in a locality sporting but an average depth of 10 feet of water; here is some inland river-thing with a draught of 6 inches, trying to be an offshore cruiser. Once taken from their natural haunts they do not sell readily; all through no fault of their own.

This trip there are some fine vessels in company; the palatial steam yacht is notably absent, while the gasoline boat is strongly to the fore. A goodly assortment of fine, husky ships is on sale; some because their owners want bigger boats; some because their owners, who are getting old and fat, have backslid with the auto bug. But seriously there are good bargains within, many good bargains. So pick, and choose, and haggle. If you are new at the picking and haggling, get you a professional haggler and you will receive more for your money, likewise you will profit much by his experience and judgment. Not that the average boat-owner is fox-eared, but because it is better business to have the particulars of every trade down in black and white, and the brokers know how to do these things properly. Know just what you are to give and exactly what you are to get, for sometimes one's enthusiasm, over the prospect of a good

trade, works queer pranks. If you are an old hand at the game, haggle your darndest and good luck to you.

Do not be afraid to buy a boat simply because she has been offered for sale more than her sisters. She may have been unfortunate; been puttering around salt creeks, whereas her timbers were meant for sterner things. Put Molly where the sea runs longest and the gulls are gray, and you will never know it was the same old Molly.

Every year as the boats begin to come in, I spend all my time looking them over, and neglecting the job I am paid to hold down. On Monday, I discover a smart little auxiliary yawl—just the thing. On Tuesday, I see a schooner: Oh! such a sweet little ship, and I always did love schooners. On Wednesday, I feel that for one of my temperament—a roomy houseboat, to lay in some quiet nook with a launch to get the cats, would be ideal. On Thursday, I am inspired—if I sold my dress suit, and ate lightly for the next four years, I might nail that 40-foot Marbleheader, or I feel that to complete my existence, I must possess a twin-screw, brass-bound, four-stacker; and then I wake up. Ah me! I guess it's just as well that I am poor, or there would be lashed to our back fence the most wonderful fleet of craft that ever leaked.

This list of boats has long been an institution, and the brokers tell me that frequently they hear from advertisements several years old. Properly worked, the list will yield fruit, and there is only one way to work it—What do you want? Of course, you don't know, although you think you do, but if you have in mind a power cruiser, and feel that you need it, keep your eyes front for power cruisers and get your bids in early. Do not pester the sellers with letters unless you mean business, and do not flirt with everything that strikes your fancy, but, bless your heart, you cannot help it, so go ahead and pick a bargain—and a bargain, mind you, is not the cheapest boat, but a boat that suits your requirements, and at a fair price.



5414

No. 5414—For Sale—Single-screw steel ocean-going cruiser, 200 ft. o. a., 165 ft. w. l., 26 ft. beam, 13 ft. draught. 3,000-mile cruising radius. Ten staterooms; four baths. Triple-expansion engine; Scotch boiler; speed 11 knots. All modern conveniences. Six tenders in davits. Cruised in foreign waters extensively; in fact, has steamed a greater distance than any other yacht in the world, same age and type, without a serious mishap. Vessel in splendid condition throughout. Offered to close estate. Low price. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 6219—For Sale—Twin-screw seagoing gasoline cruiser, 96 ft. o. a., 14 ft. beam, 4.9 ft. draught. Designed and built by Lawley, 1905. Extraordinarily heavy construction—designed for offshore cruising. Teak decks and trim. Yellow metal fastenings throughout. Four staterooms; pilothouse; berths nine; deck dining saloon; two toilets; all modern conveniences; two 50-h.p. Standards, speed 10½ knots actual. Complete cruising inventory. One of the finest gasoline yachts available. Would cost \$30,000 to duplicate. Good as new. Very low price. Apply to Agents, Seaman & Huntington, 220 Broadway, New York City.



6219

No. 913—Bargain—Semi-speed launch, 30x5.8x2 ft. Speed 14-15 miles; 30-35-h.p. Trebert, 4-cylinder, 4-cycle motor. Built 1909 by Electric Launch Co. in best manner. Copper fastened.

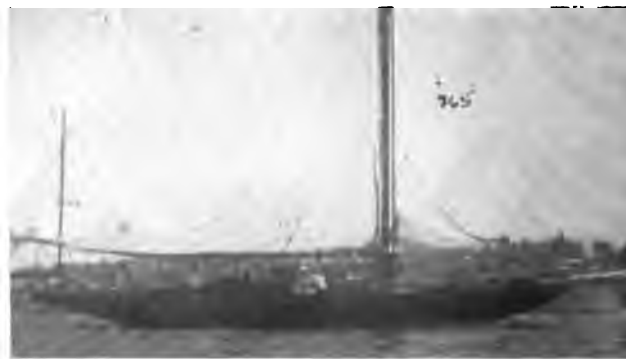


913

Decks and interior of mahogany. Complete outfit. Unusual opportunity. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 765—Offer wanted—Attractive keel sloop yacht, 51.2 ft. o. a., 33 ft. w. l., 12 ft. beam, 7.6 ft. draught. Built 1903. Lead ballast on keel. Double stateroom, saloon with two berths, toilet and lavatory, etc. Mahogany cabin and cockpit. Bright decks. Light sails, new 1909. Complete equipment including dinghy. In first-class condition. Modern, fast and an able sea-boat. Owner anxious to sell. Apply to Cox & Stevens, 15 William Street, New York City.



765



296

No. 296—For Sale—Auxiliary keel sloop, 33x21x8.6x5 ft. draught. Copper fastenings, lead on keel, spoon bow, overhang stern, trunk cabin and cockpit, two berths in cabin, pipe berth forward. Especially designed for single-handed cruising; rather heavily built. Mahogany skylight, companionway slide and coaming. Engine 5-h.p., 4-cycle with Schebler carbureter under companion steps, gives speed of 5 miles. Complete cruising outfit, in first-class condition. Price reasonable. Apply to Gielow & Orr, 52 Broadway, New York City.

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No. 654—Unusual Bargain—Twin-screw gasoline cruiser, 60.9x10.8x2.6 ft. Exceptionally fast; 12 to 14 miles; two 20-



654

30-h.p., 4-cylinder, 4-cycle motors (new July, 1909). Accommodations include forward cabin and two after cabins, bath and



3449

two toilet rooms. Finish of mahogany and oak. Fully found. Best construction. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3451—For Sale—Fast Sonder boat, designed by E. A. Boardman and built by David Fenton Co., Manchester, Mass., in 1908. 32 ft. 3 in. o. a., 19 ft. 1 in. w. l., 6 ft. 8 in. beam, 5 ft. 8 in. draught. Planked with Spanish cedar finished bright. 2,300 lb lead on keel. Sails made by Cousens & Pratt in 1909, 538 sq. ft. in area, fitting beautifully and in exceptionally good condition. This boat is unusually well constructed and fast in all weather. An admirable boat for day sailing, easily handled and able. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3449—For Sale—Cruising auxiliary schooner built in 1903; 128 ft. o. a., 103 ft. w. l., 25 ft. 6 in. beam, 13 ft. 10 in. draught. Equipped with a 100-h.p. Globe motor, giving a speed of 8 knots. Built in the strongest possible manner with 50 tons lead on keel. Large cabin with three staterooms, two double and one single. Sails made by Wilson & Silsby in 1908. Well found in every particular and in perfect condition throughout. Complete cruising inventory including three boats. This is an unusual opportunity to secure a most desirable boat at a moderate figure. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1116—For Sale—Raised deck cruiser, 40.6x9.6x3 ft. New 1910. Substantial construction; copper fastened. Double stateroom forward, 9-ft. saloon, toilet, etc. Speed 10 miles; 24-h.p., 3-cylinder, 2-cycle motor. Electric lights, searchlight, dinghy, etc. Apply to Cox & Stevens, 15 William Street, New York City.



3451



1116



1095

No. 1095—For Sale—(will possibly charter). One of the well-known and popular "Scout" class of express steam yachts; 81 ft. o. a., 72 ft. w. l., 10.6 ft. beam, 3.9 ft. draught. Speed up to 18 miles. Good sea-boat and economical to operate. In first-class condition both on deck and below, including boiler and engine equipment. Furthest forward is crew's forecabin, next aft is the dining saloon with transoms, china and linen lockers, table, etc., followed by the galley, aft of which is the engine and boiler space. This is followed by the dressing room and toilet, fitted with clothes locker and chest of drawers. Next aft is after cabin with two transoms, lockers, and companionway to cockpit. The bridge deck between the two chain trunks has fixed wooden observation sofa at after end. Engine is triple-expansion, condensing, and boiler of the water-tube type, new 1910. There is a complete electric equipment with searchlight; and full outfit of cushions, carpets, linen, crockery, awnings, anchors, cables, small boat, etc. Offered for sale at a fraction of its cost because the owner will be abroad during the coming Summer. Plans, further particulars and price, from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3207—For Sale by Estate—Raised deck cruiser, 35x8x3 ft. draught. Built, 1910, for New York-Marblehead Race, but not

completed in time to compete. Strongly constructed, good sea-boat, flare bow. Forward is toilet room with two side and two full-length hanging lockers. Next is main cabin with two locker berths, the backs swinging up, giving four berths in cabin. Next aft is engine room with galley and large locker for oil-skins, etc. Large cockpit, teak paneled; reverse lever and auto steering wheel. Engine, 6-cylinder, 4-cycle. Elaborate electric light outfit. Boat little used. Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 94—For Sale (owner going abroad)—Fast motor cruiser, 74 ft. o. a. Speed up to 16 miles. Arrangement is forecabin, forward double stateroom with toilet, main saloon with two Pullman berths, sideboard, toilet room, etc.; passageway to starboard to large after deck, and to port of passage, engine room, followed by separate galley. Large bridge deck. Interior attractively finished and furnished; 6.3 ft. headroom. 6-cylinder Speedway engine, 100-h.p. Elaborate electric light equipment; searchlight. Outfit includes launch, dinghy and complete cruising equipment. Excellent sea-boat; always well kept up. In-spectable New York. Price, plans, etc., Gielow & Orr, 52 Broadway, New York City.



3207



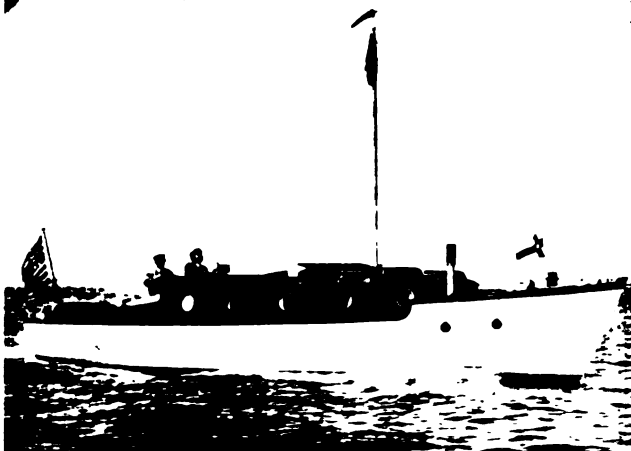
94



3413

No. 3413—For Sale—Motor launch, latest double end type, 25 ft. 6 in. o. a., 6 ft. 6 in. beam, draught about 20 in. aft; built by Emmons of Swampscott, equipped with 2-cylinder Toquet (now Stanley) motor developing 6½-h.p., reversing gear, Schebler carbureter and Apple dynamo. Spray hood of the melon type adjustable to any position and storm covering completely covering cockpit for use on mooring; all metal parts brass or bronze, full equipment of the best obtainable, including tools, extra engine parts, two propellers, one 3-blade service and one 2-blade speed, cork fenders, anchors, heavy linoleum for the floors, etc.; two 16-in. nickel-plated brass steering wheels, one forward and one amidships, with switches for control of engine at each. This pleasure launch was designed for the owner and is in the best possible condition; sheer-strake, deck, coaming and inside finish in the natural wood; her draught is such that she can be beached or grounded anywhere and will remain on even keel, this desirable feature making her an ideal craft for use on any lake, river or the sea. No expense or repairs required, motor recently overhauled, newly painted and varnished ready for use. A 12-ft. cedar, copper-fastened tender, costing \$5 per ft., built to match launch and included with above, delivered f. o. b. here at Provincetown. Price \$375. Address Dr. C. P. Curley, Provincetown, Barnstable Co., Mass.

No. 3446—For Sale—Cabin cruiser, 35x9.4x3 ft. Fine sea-boat: 137 miles in 14 hours. One-man control. New 24-h.p. Tuttle engine. K. W. ignition and magneto. Paragon clutch. Air tank, whistle, electric light. Sleeps four in large airy cabin. Launched August, 1908, by Britt Bros. Strong oak construction, cypress planking, mahogany finish, sides of trunk solid with beveled plate lights, narrow pine deck. Auxiliary sail and mast. Fully equipped with anchors, chain cable, lines, fenders, tools, charts, life-preservers, bell, fog-horn, running lights, cushions, curtains, blankets, dishes, Shipmate range, ice-chest, lavatory, toilet, hanging closet, cabinet, ship's clock. Complete and ready for use after three-months' cruise in New England waters. Want larger boat. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3446

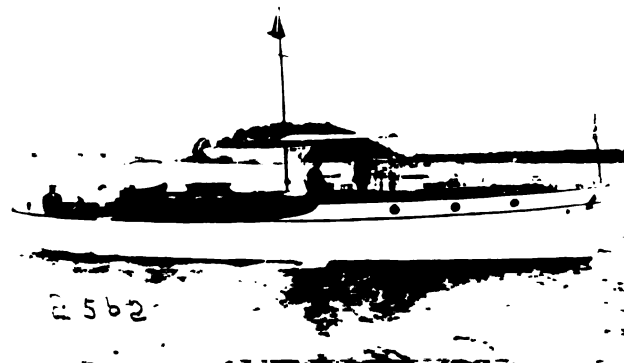
No. 3468—For Sale—Staunch and seaworthy cabin cruising launch, 42 ft. o. a., 9 ft. beam and 3 ft. draught. Cabin 14 ft. long with 6 ft. 3 in. headroom finished in mahogany and cypress. Equipped with a 25-h.p. Ideal motor giving her a speed of 10 miles an hour. Complete cruising outfit including 11-ft. cedar tender, 30-volt Holtzer-Cabot dynamo, 20-volt Exide stor-



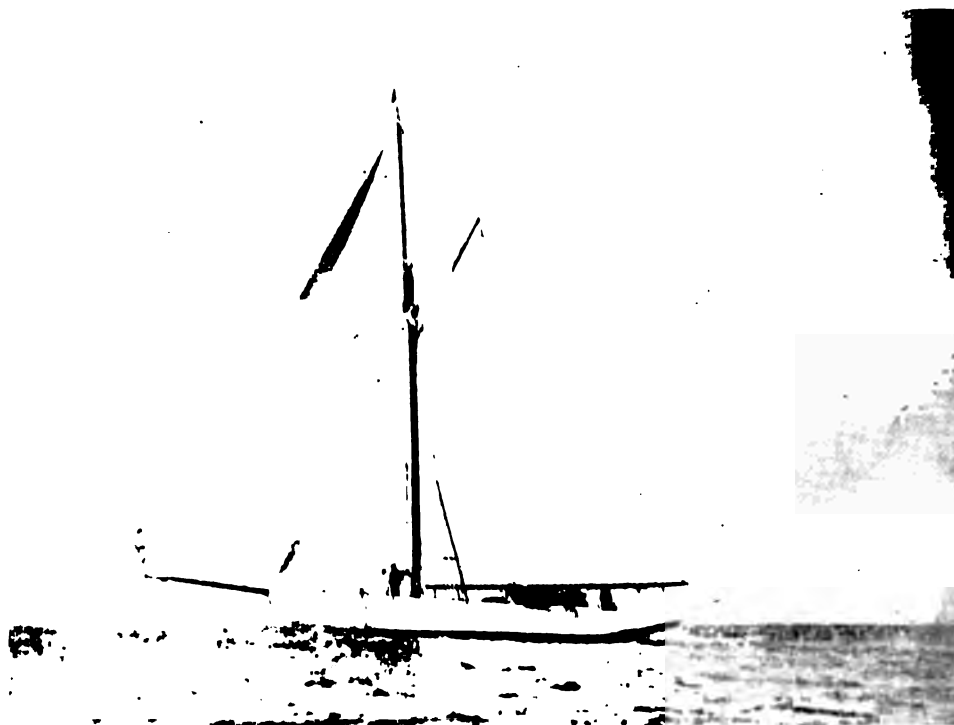
3468

age battery, complete electric switchboard, awnings and side curtains, boat davits, cushions, lights, cooking utensils, etc. Two copper gasoline tanks containing 90 gal., 3 fresh-water tanks, 80 gal. capacity. Very reasonable price. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 2562—For Sale—On account of ill health will sacrifice raised deck cruiser Gielow design, 55x50x11x3 ft. 6 in. draught. Speed 12 miles. Engine 50-h.p., 4-cylinder. Built 1909 in best possible manner. Attractive, very seaworthy. Raised deck forward, sunken bridge at after end with full width seat, steering wheel, etc. Following this is a low cabin trunk, aft of which is the cockpit about 8 ft. long. Forecastle forward with crew's toilet, etc., followed by galley. Then comes engine room. Aft of this is bathroom. Large saloon next aft with transoms, side-board, etc. Plans and further particulars apply to Gielow & Orr, 52 Broadway, New York City.



2562



10022

No. 10022—For Sale—Centerboard auxiliary cruising sloop, designed by Wintringham, built, 1902, by James M. Bayles & Son; 62 ft. o. a., 42 ft. w. l., 15 ft. beam, 7 ft. draught; $5\frac{1}{2}$ tons lead on keel. Extra heavy construction; two staterooms; saloon; captain's room; foc'sle for three, crew's w. c. Mahogany interior. Headroom 6 ft. 2 in. 20-h.p. Ralaco, new 1908; speed 7 miles. Complete cruising inventory, including two tenders in davits. Exceptionally well-built craft, suitable for coast cruising, economically maintained. Has not changed ownership since launched and is in first-class condition throughout. Reasonable offer entertained. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 229—For Sale—Attractive keel cruising sloop yacht, 33 ft. o. a., 9 ft. beam, 6 ft. draught. Copper fastenings, lead keel.

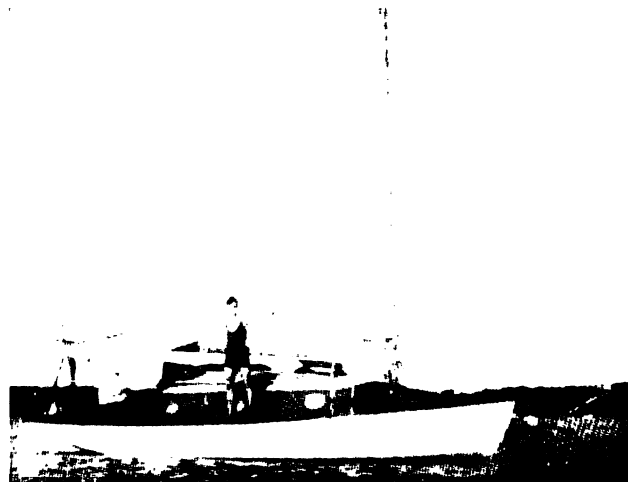


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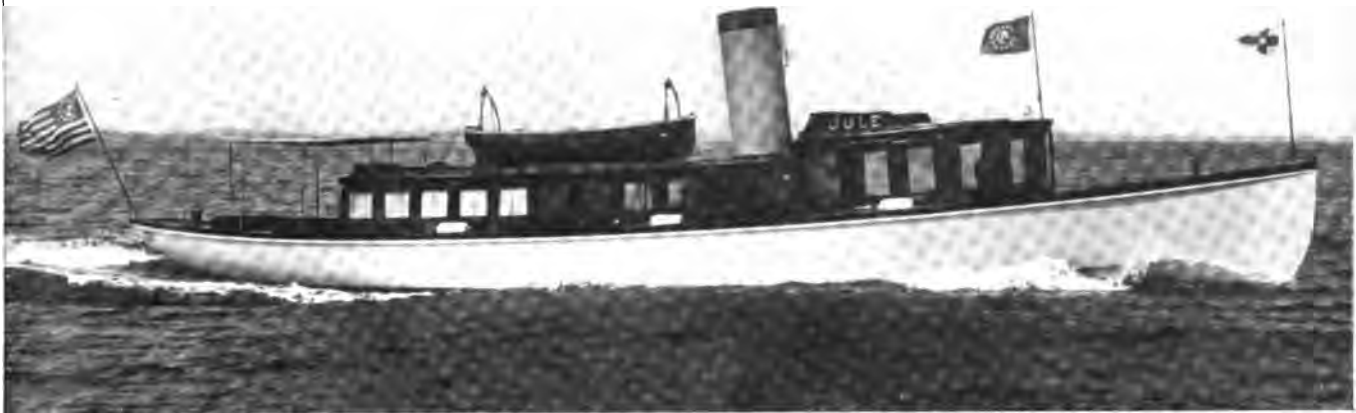
Good side self-bailing cockpit; cabin 10 ft. long; interior finished in mahogany and maple. 5 ft. headroom. Sands' toilet. Two suits of sails in good condition, also balloon jib, spinnaker, and storm jib. Fast sailer and good sea-boat. Bright decks. Good cruising outfit for six. Price attractive. Apply Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3716—For Sale—Auxiliary sloop, 33 ft. o. a., 28 ft. w. l., 9 ft. breadth, 4 ft. draught. Equipped with a 2-cylinder, 7-h.p. Palmer, lead keel, 5 ft. headroom, sleeps three with comfort. The boat was built by day's labor, and is four years old. Toilet, lockers, etc., sails in best possible condition, a bright wood tender, and everything in complete running order, and equipped fully for cruising. Inspectable at New Rochelle. Business arrangements will not permit me to use the boat to any extent this year, otherwise the boat would not be for sale at any price. The hull and everything about the boat is absolutely in the best possible condition, and will bear the most careful inspection. Will consider small boat in trade, price reasonable. A. E. Fountain, Jr., 110 East 23d Street, New York City.



3716



1094

No. 1094—For Sale—One of the finest steam launches of her size ever built; 61 ft. 6 in. o. a., 54 ft. 9 in. w. l., 13 ft. beam, 4 ft. 6 in. draught. Designed by F. D. Lawley and built by the Geo. Lawley & Son Corporation, at South Boston, Mass., in 1904. Very best of construction with oak frames, yellow pine planking and copper fastenings, with mahogany finish inside and out. Holystoned deck in perfect order. 6 ft. 2 in. headroom in cabin, which has four berths for owner and guests, one toilet, etc. The engine is a triple-expansion Lawley engine, new 1904, of 150-h.p.; diameter of cylinders, $5\frac{1}{2}$, $8\frac{7}{8}$ and $14\frac{1}{4}$; stroke, $8\frac{3}{8}$. This engine is in perfect condition and ready to run. The boiler is a Roberts' water-tube surface condenser in excellent condition, inspected last year, and allowed a pressure of 240 lb. The fuel capacity is 3 tons, and she has a normal speed of 10 knots and a maximum speed of 11 knots. She has a four-bladed bronze propeller. Her inventory is complete in every particular, including a 12-ft. tender, lights, lamps, 100-gal. water tank, two anchors and cables, set of davits and falls, megaphone, lead and line, six lanterns, cable lamp, curtains for after cabin, two clocks, barometer, 12 life-preservers, set of fenders and mooring-buoy, set of signal flags, fog-bell, binnacle, two axes, cushions, carpets, mats, fire buckets, boat-hooks, flagpoles and engine tools. The ice-chest is located aft and is very large. This

boat is in every way a superior craft, and any one desiring a steam launch of this size should not fail to investigate. She is offered for sale at a reasonable price, as the owner is building a larger boat. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1104—Exceptional Bargain—Burgess-Lawley auxiliary sloop, 58 ft. o. a., 45.6 ft. w. l., 16.5 ft. beam, 7 ft. draught. Built 1890; in first-class condition. Lead keel 17 tons. Double and single staterooms, large saloon, etc. Mahogany finish throughout. Sails new last August. Speed under power 5-6 miles; 16-h.p. Fairbanks motor. Undoubtedly best of her class available. Very complete. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3423—For Sale—Auxiliary centerboard sloop, Sprite. An A-1 sea-boat, fast and able, built by Wallin, 1905. Dimensions: 25.4x21.6x8x3.3. Outside ballast 1,465 lb, inside ballast 800 lb. Complete inventory. 5-h.p. Buffalo gives speed of 6 miles. Boat has been kept up. New sails, 1909, including storm jib and trysail. Price \$850. Boat can be seen at Rae's Boat Yard, North Beach, L. I. J. Ph. Schmitt, 156 Graham Ave., Brooklyn, N. Y.



1104



3423



1098

No. 1098—For Sale—Desirable cabin cruiser, 46x9.6x3.6 ft. Inspectable at Wayzata, Minn. Built by Moore Boat Works. Equipped with 20-h.p. 4-cylinder, 4-cycle Westman motor, giving speed 9 to 10 miles; cabins accommodate six to eight comfortably; toilet, etc. Fully found for cruising. Bargain for quick sale. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 796—Sacrifice—Raised deck day cruising launch, 51x9x3.6 ft. Built 1909. Equipped 25-h.p. Standard; speed 10½ miles. Cabin 18 ft. long, has saloon with four berths, toilet room, etc.

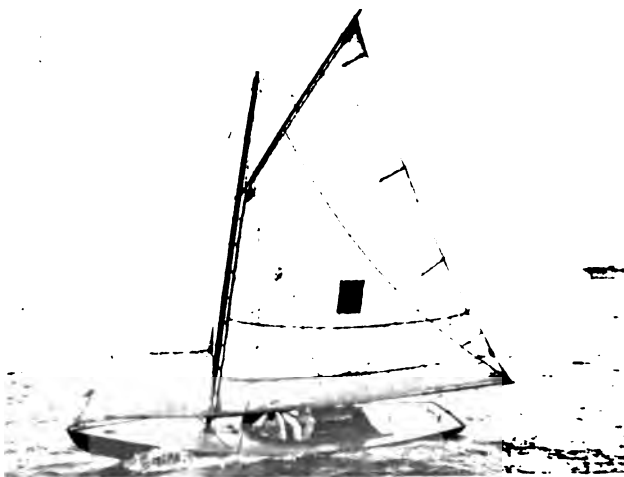


796

Cockpit 20 ft. long. Inspectable in Maine. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 2188—For Sale—One of the Indian Harbor Y. C. one-design knockabouts, 28x17x7.6x3 ft. draught. Centerboard in keel. Built of first-class materials; deck canvas covered. Hull of cedar, frames oak, copper fastenings, 700 lb of lead on keel. Jib and mainsail, new 1909. Offer wanted. Gielow & Orr, 52 Broadway, New York City.



2188



1001

No. 1001—Bargain—Hunting cabin cruiser, 33x9.3x2.9 ft. Dory type; oak frames, cedar planking; copper fastened. Cabin has accommodations for three; toilet; galley, etc. Headroom 5 ft. 10 in. Speed 9 miles; 15-h.p. 3-cylinder Smalley motor. Electric lights. Copper gasoline tank. Unusually complete. Further particulars from Cox & Stevens, 15 William Street, New York City.

* * *

No. 3225—For Sale—Price attractive. Desirable bridge deck cruiser, 40x35x8x3.3 ft. draught. Engine 25-h.p., 4-cylinder, 4-cycle, speed 10 miles. Well built, copper fastened. Two cabins



3225

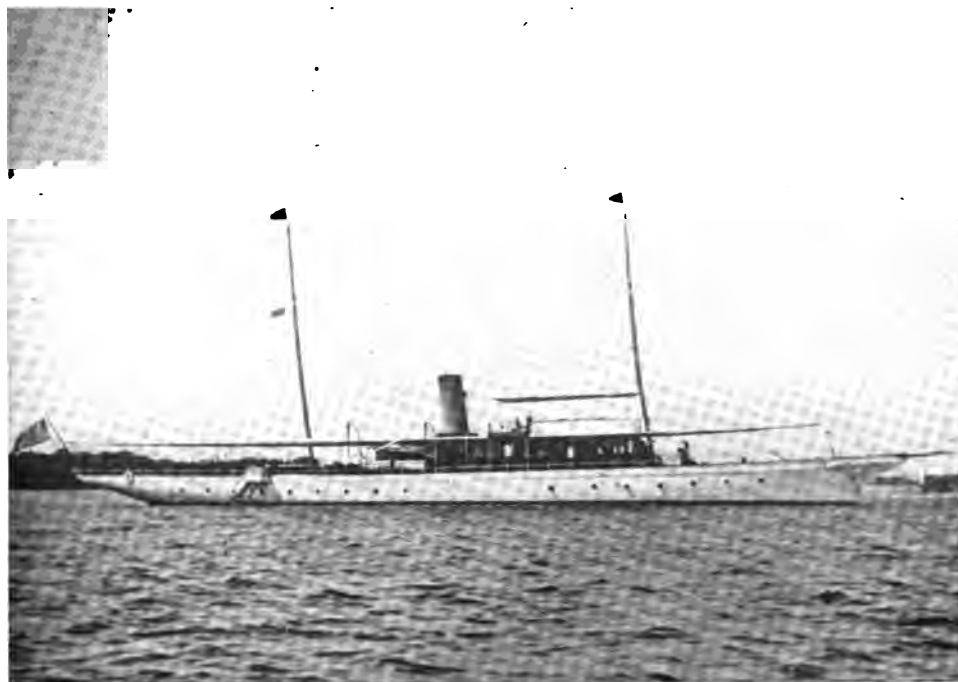
sleeping four, 6 ft. headroom; toilet. Mahogany trunks, varnished decks. Full particulars from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 2594—Great Bargain—Hunting cabin launch, 30x7x2.3 ft. draught. Cabin 16 ft. 6 in. long; will sleep three or four comfortably. Engine 2-cylinder 11-h.p., fitted with reverse gear. A fine, steady, comfortable sea-boat. Cockpit 7 ft. long; over 6 ft. headroom in cabin under skylight. Present owner has made several improvements and says that boat is in better condition and a better boat than when she was new. The cabin roof extends aft over the engine so that the engine is covered but is not in cabin. Further particulars may be had from Gielow & Orr, 52 Broadway, New York City.



2594



2697

No. 2697—For Sale—Steel single-screw coast cruiser, 143 ft. o. a., 118 ft. w. l., 16 ft. beam, 6 ft. draught. Gielow-Pusey & Jones Co., 1895. Deck dining saloon; five staterooms; saloon; berths eleven; two toilets. 800-h.p. Sullivan triple-expansion engine; Almy boiler, new 1905; speed 16.15 miles average. Has record 20.5 miles per hour. Unusually complete cruising inventory. Has only had three owners since launched. Over \$20,000 spent during 1905-6 and 1907 in permanent improvements and additions, making her to-day, for practical purposes, good as new. Entertain reasonable offer or accept smaller craft part payment. Apply to the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 10956—For Sale—Keel sloop, 38½ ft. o. a., 23 ft. w. l., 10.8 ft. beam, 5.10 ft. draught. Launched 1905. 1½ tons lead on keel. Large cabin, berths four if desired. Good galley; berth forward. Headroom 5 ft. 10 in. Exceptionally well equipped, including new sails Fall, 1909 (not used 1910). Extra suit sails. New rigging, 1909, bronze blocks, etc. Unusually fast and able. Winner of 2 firsts, 2 seconds and 2 thirds season 1907, competing against Peri II, Little Haste, Nutmeg and Medric. Boat and equipment in first-class condition. Very low price. Address the Agents, Seaman & Huntington, 220 Broadway, N. Y. City.



10956

No. 6427—For Sale—Latest type day speed cruiser. Launched 1910, from Mower's design. 40 ft. o. a., 7 ft. beam, 2½ ft. draught. Cabin berths two; toilet. Engine controlled from forward cockpit. Copper fastenings. 60-h.p. Sterling, speed 18



6427

miles per hour. Ideal for day use, ferry service, as well as tender to racing yacht. Reasonable offer considered. Address the Agents, Seaman & Huntington, 220 Broadway, N. Y. City.

* * *

No. 3728—For Sale—High speed, open launch, substantially built of sassafras, 37x5½. Absolutely new. 20-25-h.p. Buffalo engine, 4-cylinder, 4-cycle, Bosch magneto, about 15 miles per hour, all fully equipped and in first-class condition. Complete inventory. A fast boat when desired but one in which a man may take his children and wife in absolute certainty of getting home without help. Entire outfit for sale at the cost of the engine. W. E. Gage, 14 South Front Street, Memphis, Tenn.



3728



1681

No. 1681—For Sale—Thoroughly desirable, flush deck steam yacht. 117 ft. o. a., 87 ft. w. l., 15 ft. 6 in. beam, 7 ft. draught. Speed 14 knots. Launched 1906; wooden construction, extra heavy. Mahogany deckhouse contains dining saloon, pantry and galley. Interior finish, mahogany and white. Below forward crew's forecabin and captain's and engineer's stateroom. Next aft is guest's stateroom with berth and cushioned seat each side, bureau, wardrobes, washbowl, etc. Aft of this is companionway to deckhouse; bathroom to port and reception hall to starboard. Aft again is machinery and boiler space, followed by owner's stateroom with large double bed, three extra large wardrobes, bureau and private bathroom. The main companionway is next aft with passageway to port, aft of it being guest's stateroom with two berths and private toilet. Triple-expansion Sullivan engine and Almy water-tube boiler. Good coal capacity and moderate consumption. Large electric plant; will take care of searchlights fore and aft, and lights throughout yacht. Batteries for 40-hours' service. Steam heat, steam windlass. Very attractively finished, fitted and furnished. Complete outfit, including launch, gig and dinghy. Crew seven all told. Price extremely reasonable. Plans, etc., from Gielow & Orr, 52 Broadway, New York City.

No. 136—For Sale—Herreshoff flush deck steam yacht, 75.5 ft. o. a., 59.3 ft. w. l., 13.9 ft. beam, 5.5 ft. draught. Speed 10 knots; triple-expansion engine and water-tube boiler (new 1905). Electric lights; steam heat. Accommodations include two double and one single stateroom, dining saloon, etc. This yacht is economical to operate and in first-class condition, having always been well kept up. Available at bargain figure as owner has had constructed larger yacht from our designs. Cox & Stevens, 15 William Street, New York City.

* * *

No. 2836—This yacht is a gift. Undoubtedly best bargain on market for auxiliary yawl of its size, age, etc. Purchasable for less than cost of engine and installing came. Built 1905, for present owner who cannot use, having larger yacht. Located Lake Ontario. Fitted for salt-water use. Keel type, fast under sail and power. 52x33x10x7 ft. draught. Trunk cabin and cockpit. Mahogany finish throughout. Cabin 15 ft. long, four double berths, 6.2 ft. headroom; toilet room, galley, forecabin. Sails, 1909, brass lights, awnings, anchors, and cabin equipment. Engine 25-h.p. 3-cylinder Ferro; speed 8 miles. Price, etc., Gielow & Orr, 52 Broadway, New York City.



136



2836

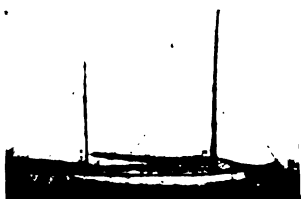


10639

No. 10639—For Sale—Flush deck keel Lawley schooner, launched 1900; 72 ft. o. a., 46 ft. w. l., 15 ft. beam, 9 ft. draught. About 12½ tons lead keel. Two staterooms; saloon; berths six; captain's room; toilet room; large galley; foc'sle with four berths, crew's w. c. Headroom 6 ft. 4 in. Power tender and dinghy. Complete cruising inventory. Offered at extremely low figure. Address Seaman & Huntington, 220 Broadway, New York City.

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No. 557—For Sale—Auxiliary yawl, 41x28x12.6x4.7 ft. draught. 6 ft. headroom. Fast under sail; extra good sea-boat. 10-h.p. Jaeger engine; speed 6 miles. Full complement sails,



557

good condition. W. c., toilet room. Round bottom tender. Well fitted out. Cost \$4,600, almost good as new. Had best of care. Sell at bargain. Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 6468—For Sale—Elco-de-Luxe fast day cruiser; launched 1910; 57 ft. o. a., 9 ft. beam, 3 ft. draught. Engine controls in



6468



6403

operator's cockpit just aft of motor compartment. Copper fastenings. Cabin berths two; toilet; galley; electric lights. Headroom 6 ft. 60-h.p. auto-marine Standard, speed 15 to 16.3 miles per hour. Fine sea-boat. Made initial run from Bayonne, N. J., to Mackinac Isle, Mich. Demonstrated successfully purpose for which she was intended. Ideal for ferry service. Cost over \$12,000. Address Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 6403—For Sale—Most unique gasoline cruiser of size available; 54 ft. o. a., 11 ft. beam, 3 ft. draught. Launched, 1909, at Robert Jacob's yard. Bridge control. Exceptionally well constructed; stateroom; saloon; berths six; bathroom; fireplace; crew's w. c.; large galley. 24-h.p. 20th Century, speed 10½ miles. Complete cruising inventory. Headroom 6 ft. 4 in. Electric lights. Teak deck and trim. Impossible to describe the many desirable features embodied in this craft. Cost \$10,000. Fine sea-boat. Reasonable offer entertained. Apply to the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 956—For Sale; price low—Auxiliary centerboard yawl, 35x25.6x10x3.6 ft. draught. Cabin 12 ft. long, 5.10 ft. headroom, finished in quartered oak, with three berths, and toilet room. Forward is galley and forecabin berth. Standing and running rigging, new 1910. Buffalo engine, 7-h.p. 2-cylinder; speed 5 knots; overhauled by builders, 1910. Fresh-water tank, refrigerator, etc. Good sea-boat, has had best of care; sound throughout. In Spring of 1910 owner spent about \$500 overhauling and making various improvements, new cushions, carpets, hair mattresses, etc. Outfit includes skiff, sails, anchors, cables, lights, blankets, linen, cutlery, crockery. Located near New York. Gielow & Orr, 52 Broadway, New York City.



956



1122

No. 1122—For Sale—Twin-screw motor yacht, 67 ft. o. a., 56 ft. w. l., 12 ft. beam, 3.6 ft. draught. Built by New York Yacht, Launch & Engine Co. Copper fastened throughout; mahogany cabin trunk; stateroom and two saloons accommodate five to seven; two toilets. Two 40-h.p. 4-cylinder, 4-cycle Lamb engines, installed 1907, give speed of $13\frac{1}{2}$ to 15 miles. Extra heavy copper fuel tank, 400 gal. Electric lighting plant new, 1907. This yacht is in first-class condition, and has an excellent inventory. Price very attractive for immediate sale. For further particulars apply to Gielow & Orr, 52 Broadway, New York City.

* * *

No. 2402—For Sale at low price—Light draught cruising motor yacht, 65 ft. o. a., 12 ft. 4 in. beam, 3 ft. 6 in. draught. Pilothouse, trunk cabin, flush deck aft, bridge deck over cabin.



2402

Interior finish, solid mahogany. Two berths each in pilothouse and main saloon, large stateroom with double bed, toilet room;



3210



6260

engine room with crew's accommodations; galley in after end of cabin trunk. Engine 25-h.p. Standard, new August, 1910, only slightly used. Electric light dynamo and batteries. Large gasoline and water tanks. Gasolene launch and dinghy; awnings, anchors, cables, etc., and cruising outfit. Located New York. Price, etc., from Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 3210—For Sale—Desirable raised deck cruiser with jib and mainsail, 34x9.5x3.1 ft. Built 1907; copper fastened below water-line. Interior finish varnish and white. Headroom 5 ft. 11 in. Double stateroom and two extension transoms in cabin; toilet; galley. Engine 24-h.p., 4-cylinder; speed $8\frac{1}{2}$ miles. Electric lights. Good cruising outfit, including awning, anchors, dinghy, etc. Raised deck forward, followed by trunk same height. Aft of this is large cockpit protected by double rail. Has proven very seaworthy and steady in rough water. For price and further particulars apply Gielow & Orr, 52 Broadway, New York City.

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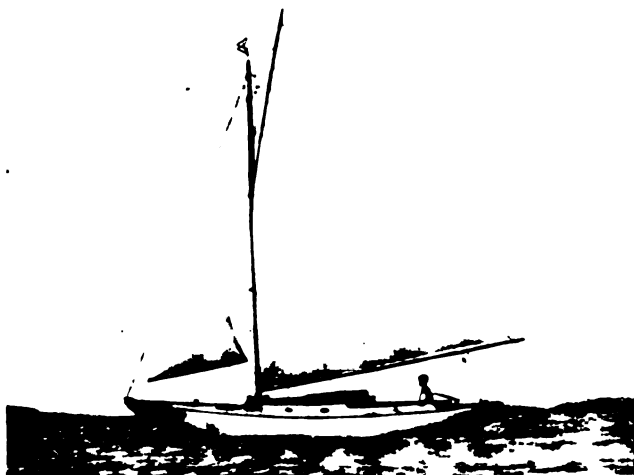
No. 6260—For Sale—Single-screw gasoline coast cruiser, 78 ft. o. a., 11.2 ft. beam, 4 ft. draught. Designed and built by Lawley, 1908. Double-planked; two staterooms; saloon, berths six; two toilets; acetylene light; 100-h.p. Standard, speed $12\frac{1}{4}$ miles per hour cruising; maximum 15.7 miles. Complete cruising inventory. Fine sea-boat, well proportioned and beautifully balanced. Has never shown any strain and does not leak under any conditions. Reasonable offer entertained. Apply to Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 335—A Bargain—Twin-screw power houseboat, 70x22.4x2.6 ft. A complete Summer home to locate where you please at any season. Living room 18x15 ft.; four large double staterooms, galley, two toilets, bath and crew's quarters for four. Upper deck 40x20 ft. Equipped with two 25-h.p., 4-cylinder, 4-cycle Lamb motors giving speed of 10 miles. In excellent condition. Apply to Cox & Stevens, 15 William Street, New York.



335



2928

No. 2928—For Sale—Keel knockabout, 31 ft. o. a., 21 ft. w. l., 7 ft. 10 in. beam, 4 ft. 6 in. draught. All ballast outside, 4,000 lb. Boat is non-capsizable, and a perfect single-hander. A 13-year-old boy gets up sails and navigates her in Boston Harbor in fair weather. Cabin is extra large, with two 6-ft. transoms, closets, galley forward with refrigerator, stove, dishes, stowage space for anchors, lights, etc., and large circular hatch leading to deck. Cabin bright oak, companionway and forward hatch mahogany. Sails first-class condition. This boat has always had the best of care, has a generous equipment, including everything necessary for cruising, and is practically ready for the water. Apply Box 3, Care THE RUDDER, 1 Hudson Street, New York City.

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No. 2868—For Sale or Exchange for larger boat—Hunting cabin cruiser, 36x9.6x2.6 ft. Launched latter part 1909; copper

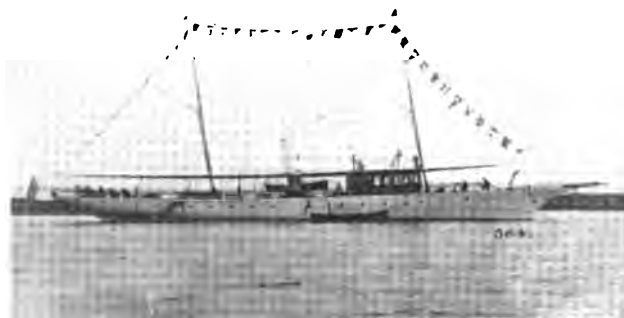


2868

fastened throughout; mahogany finish. Headroom 6 ft. 2 in. Sands' toilet; galley. 24-h.p. 4-cylinder engine; speed 10 miles.



912



364

Cabin has five large windows and port each side; also two skylights giving excellent ventilation. Price attractive. Gielow & Orr, 52 Broadway, New York City.

* * *

No. 912—For Sale—Fast power boat, 60x7.6x3.4 ft. Speed 15 miles; 55-65-h.p., 6-cylinder Sterling motor, installed 1910. Double stateroom, 12-ft. saloon, large galley, toilet room, etc. Mahogany finish. Built in best manner. Cockpit aft, 8 ft. long; also small cockpit in forward end of engine room from which motor can be controlled. First-class condition. Price attractive. Apply to Cox & Stevens, 15 William Street, New York City.

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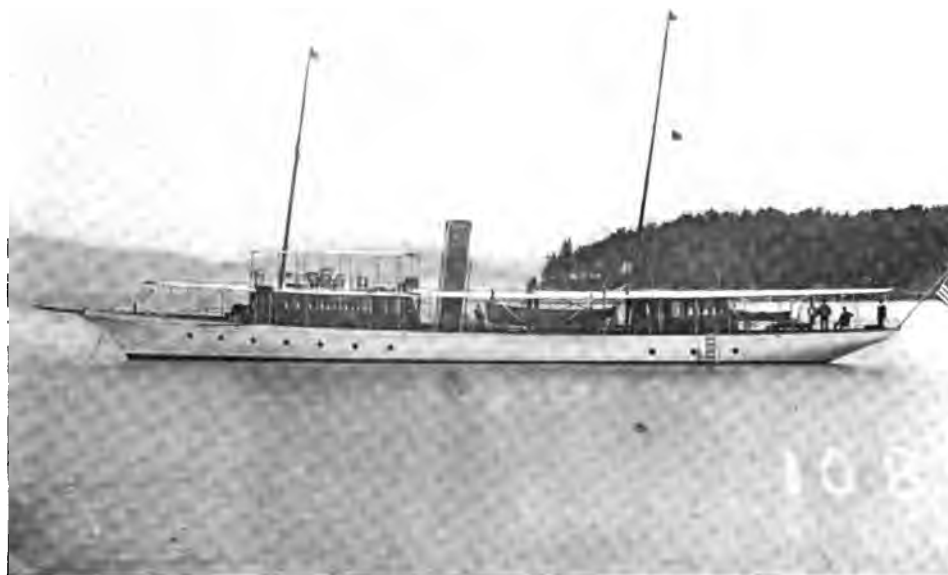
No. 364—For Sale or Charter—Flush deck, fast cruising steam yacht, 131 ft. o. a., 107 ft. w. l., 15 ft. 7 in. beam, 5 ft. 9 in. draught. Speed 14 to 17 knots. Dining room in deckhouse; galley below; crew forward. Aft are three double and two single staterooms, bathroom, two toilets, and main cabin. Triple-expansion engine and water-tube boiler. Economical coal consumption. Electric lights, steam heat. Outfit includes launch, two boats, and usual equipment. Large deck room. Price low. For further particulars, plans, and price apply to Gielow & Orr, 52 Broadway, New York City.

* * *

No. 2057—For Sale—Dory ketch, 42 ft. o. a., 31 ft. w. l., 11 ft. beam, 5 ft. 6 in. draught. Designed and built by Huntington, 1904. Copper fastened. Cabin trunk, large deck room and cockpit. Headroom 6 ft. 4 in. Interior finish mahogany. Double stateroom, with two berths, and two transom berths in main cabin. Toilet room, excellent galley and forecabin. Suit of sails in excellent condition; dinghy and skiff and complete cruising equipment. Easily handled and an ideal cruiser for offshore and heavy weather. 5 ft. freeboard forward. Desirable bargain. Located near New York. Gielow & Orr, 52 Broadway, New York City.



2057



108

No. 108—For Sale or Charter—Attractive prices. Fast, flush deck, cruising, steel steam yacht, 150 ft. o. a., 129 ft. w. l., 17 ft. 8 in. beam, 7 ft. 5 in. draught. Speed 14 to 17 miles. Two deckhouses—social hall and companionway to owner's and guest's quarters in forward one, dining room and steward's pantry in after one. Shelter seat on main deck at after end of forward house. Below forward is bathroom followed by single stateroom with passage leading aft to lobby. To starboard of passage is single stateroom with berth, bureau, washbowl, and fixed seat. To port is large wardrobe and a toilet room. Next aft is another single stateroom to starboard and companionway, lockers, etc., to port. Aft again is owner's room, full width of yacht, with double berth and enclosed bathroom, large wardrobe, also single berth, sofa and dresser. Machinery space follows, containing two water-tube boilers, quadruple expansion engine, and auxiliary machinery. Then comes galley full width of yacht, officers' staterooms, and messroom, and crew's quarters farthest aft. Interior attractively furnished and finished in mahogany. Thoroughly equipped for cruising. Outfit includes launch, gig, dinghy, etc. Yacht economical to operate, and well kept up. Price, plans, and further particulars from Gielow & Orr, 52 Broadway, New York City.

No. 6288—For Sale—Twin-screw steel coast cruising gasoline yacht, 110 ft. o. a., 17½ ft. beam, 6 ft. draught. Built 1908. Deck dining saloon; four staterooms; after saloon; berths seven; two baths; all modern conveniences. Economically maintained—full crew eight. Two 125-h.p. Standards, speed 12-13 knots. Completely furnished in every department. One of the most successful craft of character extant. Low price. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 498—For Sale—Complete and unusually comfortable houseboat, 66x16x3½ ft. Speed 5 miles an hour. In first-class order. Completely overhauled and refitted in 1909. Bathroom with porcelain tub, toilet and wash-basin. Pilot over engine room with engine control. Windows have blinds and screens. Each stateroom fitted with bureau, mirror, lavatory, etc. Hot and cold running water, acetylene lights. Engine 15-h.p., 4-cycle. Complete cruising inventory new 1909. Saloon 15x16 ft., also used as dining room. Owner's stateroom on upper deck, with double and single berth, two double staterooms on main deck. Plans, full particulars, Gielow & Orr, 52 Broadway, N. Y. City.



6288



498



3685

No. 3685—For Sale at a bargain—Full-cabined cruising launch Ninawa, 46 ft. o. a. by 9 ft. 4 in. Nearly new, perfectly running engine, 4-cycle, 4-cylinder 6x7, giving 10-mile speed, and ample power. Cabin polished oak, containing toilet room, galley, ice-box, water tank, clothes lockers, and all conveniences for long cruising. Comfortable sleeping quarters for seven to eight people. Two steering wheels, one inside, one outside. Full equipment lamps, life-preservers, anchor, dinghy, whistle, oil tank, etc. Hull very staunch, and of beautiful lines. For terms, price, etc., address William W. Nash, Ottawa, Ill.

* * *

No. 322—For Sale—Big Bargain—Desirable cruising launch, 61x9.6x3.3 ft. draught. Can cruise at 12 miles an hour all day if desired. Engine 60-h.p. 4-cylinder Craig. Interior finished in finest mahogany. Galley has three-hole stove; saloon 14 ft. long, fitted with green plush cushions and fine mahogany side-board. Large after deck 14 ft. long, protected by brass rail. Ten persons can sit comfortably on this deck. Yacht carpeted and curtained throughout by Sloane of New York. She is exceptionally fast for her type, and a fine sea-boat. Does not leak and is in excellent condition. Was thoroughly overhauled Spring, 1909; engine put in first-class order, new carpets, curtains, awning, boat cover, etc. Complete cruising outfit. Price and further particulars apply to Gielow & Orr, 52 Broadway, New York City.

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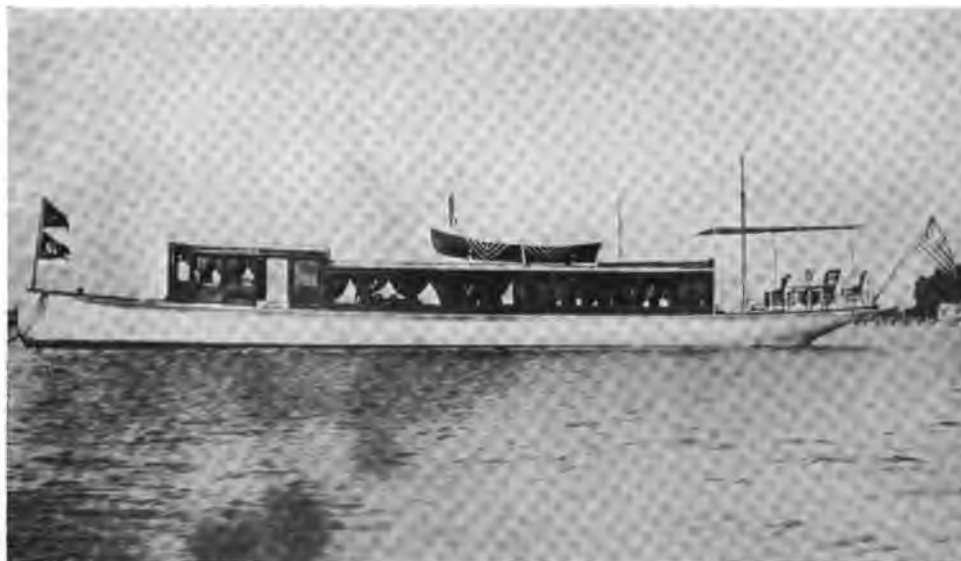
No. 3469—For Sale—The well-known smart little keel schooner Magnolia, for five years flagship of the Boston Y. C. A splendid cruiser with considerable speed. 48 ft. o. a., 40 ft. w. l., 15 ft. beam, 9 ft. draught. Built in the best possible manner with 5 tons of lead inside. Cabin finished in white and

mahogany with 6 ft. 2 in. headroom. Two suits of sails, two boats and complete cruising equipment. Magnolia is laid up for the Winter near Boston, and prospective purchasers are cor-

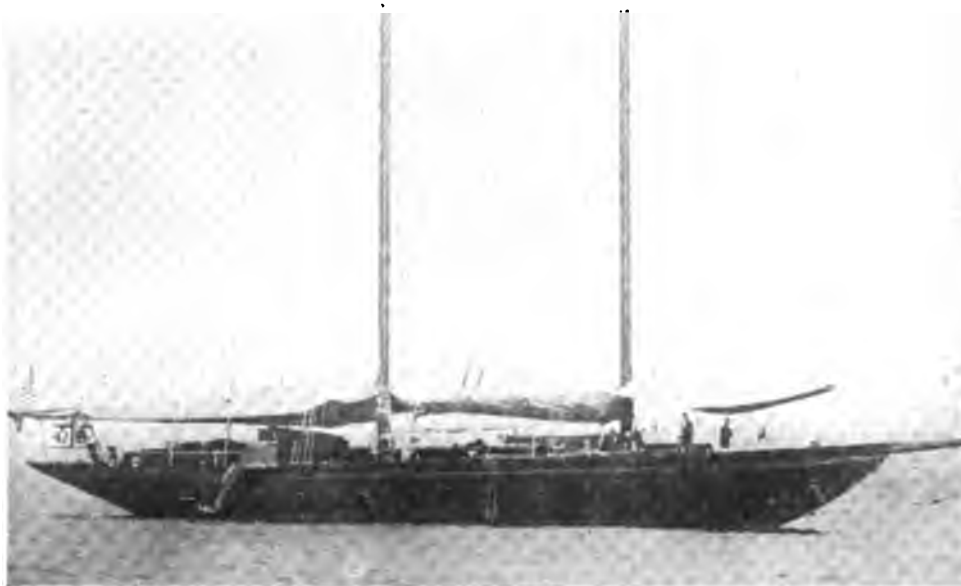


3469

dially invited to make a thorough inspection of her. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



322



2980

No. 2980—For Sale or Charter—Exceedingly desirable, centerboard auxiliary schooner yacht, 106x75x24.6x5.6 ft. draught. Built 1908. Partially composite construction. Copper fastened and copper sheathed below water-line. Flush deck. Teak deck trimmings, skylights, hatches, etc. Interior finish, silver wood, mahogany and white. Attractively finished and furnished. Large main saloon, owner's stateroom full width of yacht with private bathroom; two other double staterooms, bathroom, two toilets, engine room, officers' staterooms, galley and forecabin. Accommodates six to nine in owner's party. 6-cylinder 200-h.p. gasoline engine, giving speed of 8 knots. Independent and elaborate electric light outfit; storage batteries. Large fresh-water and gasoline tanks. Running hot and cold fresh, also salt water. Electric piano, pumps, etc. Hot-water heating system. Very complete outfit below and on deck, including gasoline launch, gig, dinghy, awnings, anchors, and full suit of working, storm and light sails. Is an excellent craft for Northern and Southern waters. All quarters well ventilated. Has proved herself fast and a good sea-boat. On one trip came from Miami to New York under sail in 5 days and 9 hours. Very reasonable offer considered. Prices, plans, etc., from Gielow & Orr, 52 Broadway, New York City.

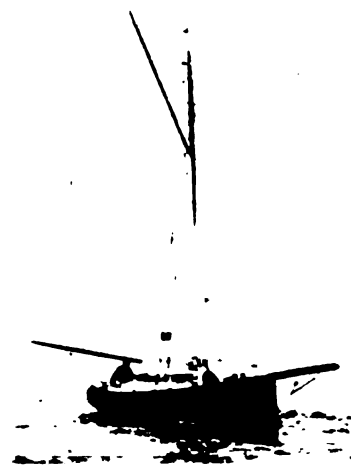
No. 579—For Sale—Magnificent power yacht, 60x11.6x4 ft. Launched 1909. Construction very best. Accommodations include double and single stateroom, 10-ft. saloon, two toilets, etc. Interior finish mahogany, white and green. Very complete equipment of the best. Speed 11 miles; 50-60-h.p. Jencick motor. Electric lights (independent plant), searchlight, etc. Probably the best boat of her size available; any one wishing a high-grade craft will do well to investigate. For details, plans, etc., apply to Cox & Stevens, 15 William Street, New York City.

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No. 3727—For Sale—Auxiliary cruiser, 28x23x10x5'6". Designed for ocean cruising of heaviest construction in hull and rigging. Low seagoing rig with powerful engine. Handles equally well under sail or power in any weather. Owner has made several trips to the Provinces. Large cabin, mahogany finish, headroom, bureaus, many lockers. Galley with ice-chest, manhole and ventilator. Engine Mianus 1009, 7½-h.p.; speed 6 miles. Two 30-gal. copper tanks draining outboard. This yacht is a ship in appearance and every detail and offers more in comfort and weatherly qualities than any craft of her size on the coast. Price \$550. Dr. Coleman Tousey, 100 Boylston Street, Boston, Mass.



579



3727



25154

No. 25154—For Sale—Handsome cruising 30-footer, designed and built by Lawley, in 1903. 49 ft. 4 in. o. a., 11 ft. 3 in. beam, 7 ft. 3 in. draught. Built in the best possible manner. Double planked and copper fastened. Handsome bright deck. Teak trimmings outside, and rich, solid mahogany inside. 6 ft. 3 in. headroom in cabin, which is 14 ft. long. Two toilet rooms. Cabin has over fifteen lockers, with three berths, desk and cabinet. Galley has sink, ice-chest, stove, lockers, two berths for crew, and separate w. c. Wilson & Silsby sails, 1,300 sq. ft. in area. The equipment of this boat is most complete, including handsome binnacle, cushions, carpets, curtains, riding and side lights, tender on davits, air cushions and crew mattresses, stove, cooking utensils, table, skylight, compass, awning, sidesteps, life-buoys, capstan, etc. New mast and new wire rigging in 1907; new sails in 1909. Everything about this boat is of the best, and any one desiring a well-built, comfortable cruising boat should not neglect this opportunity. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3450—For Sale—Very handy keel auxiliary, built in 1904, 32 ft. 2 in. o. a., 21 ft. w. l., 8 ft. 6 in. beam, 5 ft. 3 in. draught.

Equipped with a 3½-h.p. Bridgeport motor, new 1909, giving a speed of 6½ miles an hour. This boat has approximately 5 ft. headroom and a splendid little boat for day sailing or cruising. She is well constructed with 2,400 lb outside ballast, and has good cruising equipment throughout. An ideal single-hander. Inspectable near Boston. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3714—For Sale—Famous Boston cat Atalanta, 27 ft. o. a., 25 ft. w. l., 10 ft. 8 in. beam, 3 ft. 2 in. draught, 5 ft. 8 in. headroom, very large cabin, clothes lockers, table racks, dish lockers, ice-chest, pantasote cushions, galley fully equipped, mahogany finish, self-bailing, bright finished cockpit; steers with wheel. Designed by Small Bros., a wholesome, able-looking boat, no better built or nicer handling cat was ever turned out; very dry and stiff at her best in a thrash to windward in a gale of wind. Has exceptional racing record in Massachusetts Bay. Practically new, afloat only three seasons; last season installed 6-h.p. engine all under cockpit floor. Laid up past two seasons; cannot use her; worth \$1,500 and will sacrifice for \$875 or trade for automobile. A. A. Lincoln, 180 Fulton Street, New York City.



3450



3714



3465

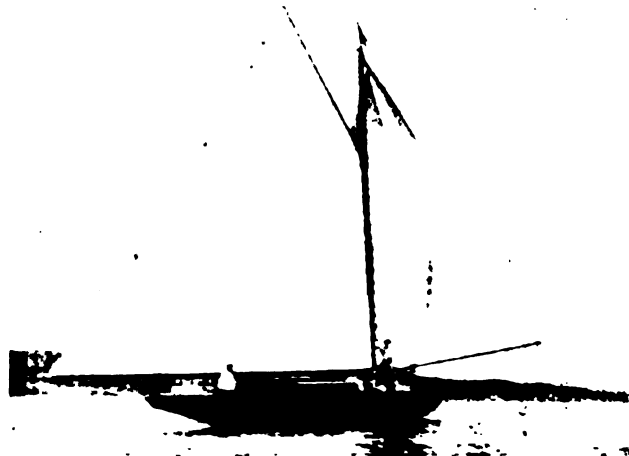
No. 3465—For Sale—Staunch, able and speedy keel sloop Gavilan, one of the ablest sea-boats in her class. Built in the best possible manner, with double planked mahogany, oak frames, narrow strip Spanish cedar deck, mahogany house and water-tight cockpit. 39 ft. o. a., 28 ft. 6 in. w. l., 11 ft. 6 in. beam, 6 ft. 9 in. draught. About 6,000 lb lead on keel. Roomy deck, varnished bronze capstan. Cabin is unusually spacious, full headroom under skylight 6 ft. long, well ventilated, with long and wide transoms, and ample closet and storage room. State-room and large light toilet room. Interior finish mahogany. Galley and pipe berth forward. Sleeps seven comfortably. Sails, spars and rigging in first-class condition, including balloon jib, spinnaker and gaff topsail for use in light airs. Inventory very complete and in A-1 shape, including three anchors, two chain cables, awnings, brass binnacle, riding and side lights, two-burner Primus stove, ice-chest, hair cushions, mattresses, etc. Yacht has always been kept in excellent condition. Has cruised from New York to Nova Scotia. Very easy to handle. First-class tender. A real bargain. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3477—For Sale—Unusually attractive motor boat, 38 ft. long, 9 ft. beam and 3 ft. draught. Designed and built by Murray & Tregurtha at South Boston in 1907 and equipped with a 16-h.p. Murray & Tregurtha engine, giving her a speed of over 9 miles an hour. This boat has a 10-ft. cabin amidships with full headroom, w. c. and lavatory, two transoms, etc. Two water-tight cockpits, one aft of cabin, 9 ft. long, the other forward, 5 ft. long. She is handsomely finished with mahogany throughout, and is a very seaworthy boat. Has had but little use. A bargain. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3461—For Sale—Very desirable sloop built in 1903, 40 ft. o. a., 28 ft. w. l., 10 ft. 1 in. beam and 5 ft. 6 in. draught. Water-tight cockpit, 2,300 lb lead on keel. Cabin has 5 ft. 10 in. headroom and is finished in white. Toilet in separate compartment. Sails in perfect condition, as they were used for only one season. Four people can sleep comfortably in cabin, and there is a pipe berth forward. Good cruising outfit. Any one desiring a comfortable cruising boat with good speed should investigate this craft. Price very reasonable. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3477



3461



3460

No. 3460—For Sale—Very attractive keel cruising sloop, 57 ft. o. a., 40 ft. w. l., 13 ft. 5 in. beam, 8 ft. 8 in. draught. Flush deck. 14 tons of lead ballast on keel. 19 gross tonnage. Large cabin with 6 ft. 2 in. headroom finished in teak and very handsome. Two staterooms, two toilets, one aft and one forward for crew. Sails made by Cousens & Pratt in 1909 and in perfect condition. Standing rigging made of the finest wire rope and almost new. Oregon pine spars. New running rigging. Most complete cruising equipment including two boats, one a 14-ft. power tender and the other a first-class rowing tender, very finest cushions, curtains, etc. No expense has been spared in maintaining the equipment and condition of this yacht and she is complete in every detail. Carries three anchors and cables, two chains and one rope. Has two water tanks with a total capacity of 250 gal., large binnacle, davits for tender, etc. This yacht is built in the strongest manner and is capable of cruising anywhere. Unusually stiff and able and a fast sailer. As may be seen from the photograph she is of attractive appearance with well turned lines. Only reason for selling, owner desires larger boat. Can easily be inspected by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3464—For Sale—36x8.5 ft. gasoline power boat, 3.6 ft. draught, two cabins, full headroom, cockpit 7 ft. Toilet room; large

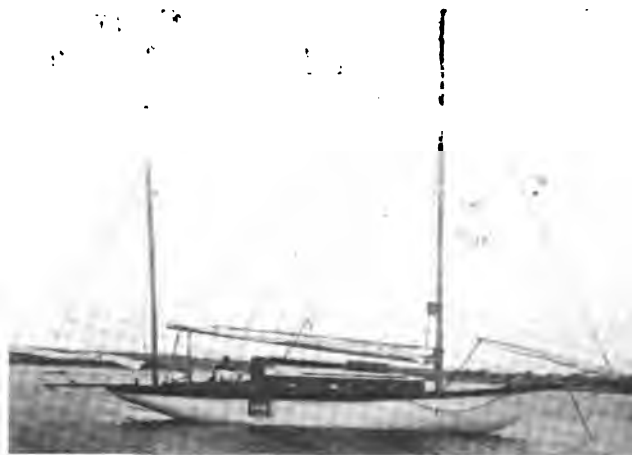
clothes locker in main cabin, also one in engine room. Electric lights and complete inventory. Sleeps four, this number making three weeks' cruise Maine coast last season. Knox 2-cylinder, 2-cycle, 13-h.p.; speed good 9 miles. 10-ft. tender. Galley in engine room. Two-burner alcohol stove, enamel iron sink. Fuel capacity 65 gal., fresh water 50 gal., drinking water, special tank 12 gal. Mast and sail. Air tank for whistle. Ice-chest and storage space in stern. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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No. 3731—For Sale—Auxiliary cruising yawl, 31x22x9x4½; centerboard below floor. Designed by Mower as auxiliary, 3½-h.p. Palmer installed. Has bridge deck. Launched last July; McClellan sails; Sands' toilet; full headroom; refrigerator, stove platform and hinging berth forward. Large cabin, in oak, paneled inside and out. Steers with wheel. Anchors, cables, cushions, carpet, etc. Boat and gear in perfect condition; very strong construction. One first-class mahogany and cedar tender, cost \$75, copper fastened, built June, 1910; also combination balloon jib and spinnaker. An unusual opportunity and low price. All particulars from any yacht broker or owner. The boat may be seen at Larson's yard, New Rochelle. W. Winslow, 5 East 42d Street, New York City. 'Phone 6882 Bronx.



3464



3731



5968

No. 5968—For Sale—Twin-screw steel coast cruiser, 160 ft. o. a., 130 ft. w. l., 18 ft. beam, 7½ ft. draught. Launched 1901. Deck dining saloon forward; four staterooms; saloon; two bathrooms; all modern conveniences. Seabury triple-expansion engines and safety water-tube boilers; speed 13 knots normal running. Complete cruising inventory, including four tenders in davits. Splendid weatherly craft. Price \$60,000, subject to offer. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

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No. 5387—For Sale—Exceptionally able and commodious houseboat, 65 ft. o. a., 25 ft. beam, 7 ft. draught. Built on exceptionally strong hull capable of withstanding any weather.



5387

Six staterooms with full-sized beds, basins and running water; two bathrooms—one with shower. Large galley with dumb-waiter to dining room on upper deck; offers accommodations found in well-appointed apartment. Completely fitted for comfort and convenience of family usage. Low price. Available for charter. Address Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 3095—For Sale—Gielow-designed raised deck cruiser, 60.6x55.7x12x3.6 ft. draught. Engine 4-cylinder, 4-cycle, 40-h.p., new 1910; speed 10 miles. Main cabin 10 ft. long with three transom berths, sideboard, lockers, etc. Headroom 6.2 ft. Double and single staterooms. Interior finish all mahogany; white ceilings. Two toilets; galley and crew forward. Ample water and gasoline tanks. Independent electric outfit. Desirable craft and first-class sea-boat. Handsomely finished, attractively furnished; upholstery, carpets, curtains, cushions, awnings, etc., and whole boat thoroughly overhauled, 1910. Good cruising outfit. Reasonable price. Particulars, plans, etc., from Gielow & Orr, 52 Broadway, New York City.



3095



3459

No. 3459—For Sale—Centerboard knockabout, 30 ft. 3 in. o. a., 17 ft. 10 in. w. l., 7 ft. beam, 2 ft. 6 in. draught. Built in 1902 by Hanley Construction Co. at Quincy, Mass. Designed by C. C. Hanley; fits 18-ft. knockabout class by official measurement. Very fast and able. A splendid day sailing boat or smart cruiser. Built in very best manner, brass screw fastenings; lead ballast all outside. Mahogany seats and companionway; the prettiest boat ever turned out by Hanley. Very easily handled and perfectly balanced. Will be sold considerably less than cost. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1005—For Sale—Splendid high speed gasolene cruiser, 60x9 ft. Launched last August. Built in most expensive manner by well-known firm. Finished in selected mahogany throughout. Cabin has two extension berths, toilet room, galley, etc.



1005

Electric lights. Ready for installation of motors. For full particulars, plans, etc., apply to Cox & Stevens, 15 William Street, New York City.



3458



3717

No. 3458—For Sale—Very handy auxiliary schooner, 42 ft. 6 in. o. a., 34 ft. w. l., 10 ft. beam, 4 ft. 9 in. draught. A centerboard boat with 5 tons inside ballast. Water-tight cockpit, etc. Equipped with a 9-h.p. Stanley engine, giving her a speed of 6 miles an hour. Cabin 12 ft. long with 5 ft. 6 in. headroom. Toilet room in cabin. This boat is beautifully adapted for long cruising, exceptionally seaworthy and comfortable. Her equipment is absolutely complete, including good tender, lights, cushions, etc. Bargain. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3717—For Sale—Power yacht Romona, 39 ft. o. a., 36 ft. w. l., 9 ft. 3 in. breadth, 3 ft. 6 in. draught; designed and built by Britt Brothers in the Fall of 1909; 3-cylinder, 18-h.p. Standard engine; gasolene tanks under cockpit, capacity 120 gal.; cruising speed 10 miles per hour; electric lights, etc.; steers from aft in cockpit; 1,000 lb of movable lead ballast; full cruising equipment. A 10-ft. cedar tender; water tanks 100 gal. capacity. The boat is very seaworthy, and has cruising accommodations for four persons. Folding lavatory, toilet, ice-chest, and a Shipmate range in the galley; cabin finished in African mahogany. 6 ft. 4 in. headroom, upholstered throughout. The boat is in best possible condition, and with a coat of paint is ready for an extended cruise. Can be seen at Seabury's Ship Yard, Morris Heights, New York, at any time. For further particulars and price apply to Charles L. Seabury & Co., Morris Heights, New York, or F. B. Jones, 29 Broadway, New York City, or any other yacht broker.

* * *

No. 3462—For Sale—Fine gasolene cabin launch, 50 ft. long, 30-h.p. Murray & Tregurtha engine. Built in the very best manner by Murray & Tregurtha, has cabin 15 ft. long, 6 ft. headroom, engine room, closets, kitchenette (including stove), sink with pump, cupboards and ice-chest. Cabin finished in mahogany, engine room and cockpit finished in oak, cabin upholstered in plush and leather with sleeping accommodations for eight. Planking is cedar copper riveted. The boat is in perfect condition ready and fitted for sea and has a speed of 10 knots per hour. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3462

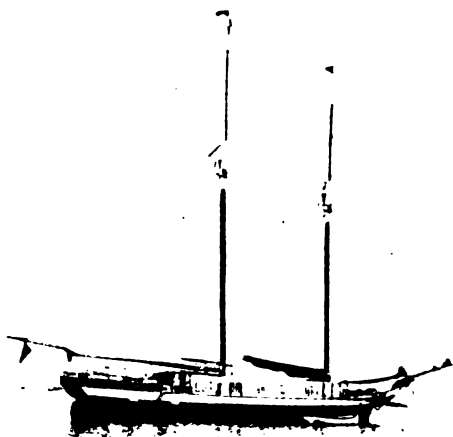


3452

No. 3452—For Sale—Well-known sloop yacht Virginia. Designed by Nathaniel G. Herreshoff and built by Herreshoff Manufacturing Co. at Bristol, R. I. 41 ft. 5 in. o. a., 25 ft. w. l., 10 ft. beam, 6 ft. 5 in. draught. Beautifully constructed with double mahogany planking, copper fastenings, canvas deck, etc. 8,000 lb lead on keel. Water-tight cockpit 9 ft. long. Large cabin which can comfortably accommodate six persons, with 5 ft. 6 in. headroom. Sails made by Wilson & Silsby of the very finest duck, almost new and in perfect condition. Two jibs, two spinnakers, balloon jib, etc. Good cruising equipment with tender, two anchors and cables, cushions, stove, dishes, blankets, and all other necessary articles. Hollow mast, boom and gaff of the finest construction. Best plough steel wire rigging and bronze fittings throughout. In 1910 out of 15 starts Virginia won 13 firsts, 1 second, 1 sixth. Won championship of Boston Y. C. with a percentage of 100, not losing a race. Won Corinthian Y. C.'s Midsummer Series prize, Boston Y. C.'s annual cruise prize and many other valuable trophies. Though Virginia is a noted prize winner she is also a splendid cruising boat, and there is no better all-around fast cruiser afloat. Only reason for selling is that owner is going to sail a larger yacht next season. Inspectable near Boston. Reasonable price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3457—For Sale—Well-known houseboat, 108 ft. o. a., 24 ft. beam, 9 ft. draught. Strong and roomy; splendidly arranged and equipped; large windows giving unusually fine light and ventilation. Five large staterooms on upper deck; white enamel beds, berths and window seats. Bathroom; saloon a splendid apartment, 22x14 ft.; four windows; dining room 19x15 ft. Kitchen, captain's room, servants' room and crew's quarters on lower deck. Probably the most handsome and best arranged houseboat on the coast. Spend the Summer afloat and enjoy life! Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3455—For Sale—Staunch and able keel cruising sloop built by Ambrose A. Martin, at East Boston, Mass.; 31 ft. 6 in. o. a., 24 ft. 9 in. w. l., 10 ft. beam, 5 ft. draught. Strongly built with water-tight cockpit 7 ft. long. Outside ballast, copper fastenings, white and yellow pine planking, oak frames, etc. Sails made by Wilson & Silsby in 1909. Comfortable cabin with good headroom. This desirable cruiser can be purchased at a very reasonable figure. Apply to the Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3457



3455



3454

No. 3454—For Sale—Very attractive raised deck motor boat, designed by Small Bros. and built by G. B. Loring at E. Braintree in 1907. 33 ft. o. a., 29 ft. 8 in. w. l., 8 ft. 6 in. beam, 3 ft. draught. Built in the very best manner, planked with white cedar with brass screw fastenings and oak frames. Water-tight cockpit, 10 ft. long. Cabin has 6 ft. headroom under the skylight and is 18 ft. long finished in natural cypress. Toilet in engine room. Equipped with a 2-cylinder, 4-cycle, 12-h.p. Sterling engine, 1909 model. Gas tanks under seats in cockpit, 80 gal. capacity. Sides of cabin, sails, etc., made of oak finished bright, with mahogany forward hatch, skylight, companionway, slide doors and seats in cockpit. Finest quality hair cushions in cabin, making berths for four persons. Engine is equipped with Perfex ignition system, new in July, 1910. New air pump and tank whistle, etc. Life-preservers, lights, etc., as prescribed by law. Reverse lever and spark and throttle levers are carried to steering position. This boat is completely equipped for cruising and has a 12-ft. cedar tender, 40-gal. water tank, two anchors and cables. Inspectable near Boston. For sale at a bargain price. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

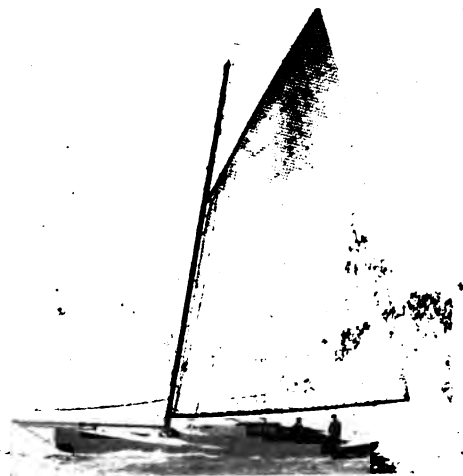
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No. 3712—\$525—Auxiliary sloop, 26 ft. o. a., 23 ft. w. l., 10 ft. beam, 3 ft. 9 in. draught, 5-h.p. Lozier engine with batteries and magneto. New mainsail, jib two seasons old, new 12-ft. tender fully equipped for cruising; with two anchors, cables, chain, lights, bell, horn, whistle, life-preservers, awning, chairs, hair cushions for transoms 5 in. thick velour covered, Shipmate range, Goblet and Dolan w. c., tools, dishes, pans, etc. In New York. Owner wants larger boat and would offer in part trade. C. I. Crocker, 179 Washington Street, Brooklyn, N. Y.

* * *

No. 3453—For Sale—Fast 22-footer Nutmeg, winner of scores of races, including the Long Island Ocean Race, and New Bedford Y. C. RUDDER Ocean Race of 1909. Nutmeg is almost invincible in her class as an ocean racer and her splendid cabin accommodations make her an exceptional boat for cruising. Designed and built by Hanley, at Quincy, Mass., 1905. 38 ft. o. a., 22 ft. w. l., 10 ft. 2 in. beam, 7 ft. 2 in. draught. Very best

construction throughout. Two suits of sails, one brand new last year. Any one desiring to purchase a well-built, able cruiser of



3453

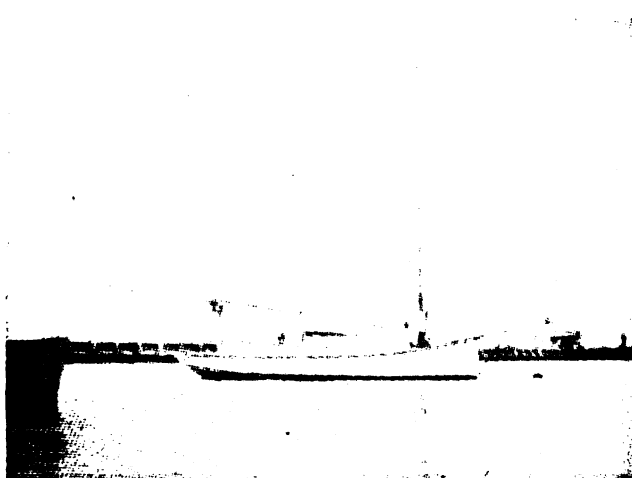
exceptional speed should not neglect this opportunity. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3730—For Sale—My 25-ft. cabin launch, 5½ ft. beam, 2-cylinder, 10-h.p., 4-cycle, jump-spark Orswell System Palmer engine, and K. W. magneto, cushions inside, and cork cushions in cockpit; boat, engine and fittings nearly new. Two anchors and road lines all complete ready to start. Can be seen at Palmer's boat shop at Nahant, or apply at 467 Union Street, Lynn, Mass. Selling because the owner has no use for it. Cost nearly \$1,000. No reasonable offer rejected. John C. Hamley, 334 Broad Street, Lynn, Mass.



3730



3712



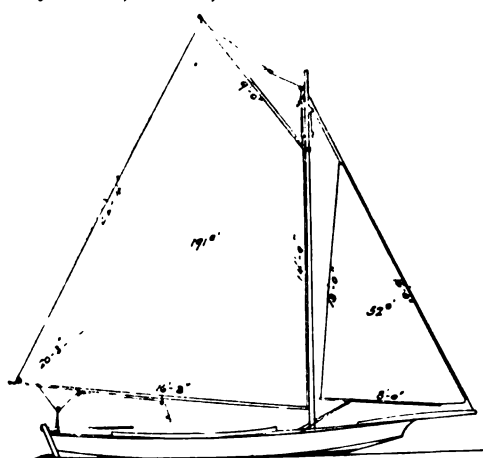
72

No. 72—For Sale—Keel cruising sloop, 51 ft. o. a., 32 ft. l. w. l., 11 ft. beam, 7 ft. draught. Designed by Crowninshield; built by Lawley in 1902. Six tons of outside lead ballast. Probably the best arranged and most elaborately finished craft of her size and type. Accommodations consist of large main cabin with two large closets, two fixed berths with wide transoms in front, sideboards at forward end, all finished in paneled mahogany. Forward to starboard large toilet room 6 ft. long with fixed washbasin, closets, etc. To starboard 6-ft. galley with stove space, ice-chest, etc. Forward forecabin with berths for two men, crew's toilet, etc. An ideal fast cruiser completely equipped in every detail, in the finest possible condition. Apply only to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 3713—For Sale—Centerboard sloop, 20 ft. o. a., 6 ft. 9 in. beam, 18 in. draught; new sails and running rigging; fast and able; low price for a quick sale. Also 8-ft. round bottom, lap-streak tender. W. F. Reynolds, 120 Marlboro Street, Wollaston, Mass.

* * *

No. 2598—For Sale—Desirable auxiliary cruising sloop, very fast and seaworthy, 36x30.4x3 ft. 6 in. draught. Copper fastenings. Nearly 4 tons of lead and iron inside ballast. Good freeboard. Cabin 13 ft. long is of oak and yellow pine; varnished and has two transoms, each 13 ft. long. Sails in good condition. Awning new 1910. Engine 11-h.p. jump-spark Ferro new 1910 and will drive the yacht about 6½ miles an hour. For further particulars apply to Gielow & Orr, 52 Broadway, New York City.



SAIL PLAN
3713



2598



2976

No. 2976—For Sale—Probably the most desirable boat of her type and size available; a comfortable and roomy boat 40x22x1 ft. draught, built 1909; modern and up-to-date in every respect. Has proven more than satisfactory. Everything of the best. Forward deck 21x3 ft.; after deck 21x5 ft.; upper deck 34x18 ft. Main saloon fitted with bookcase, library table, dining table, extension couch, chairs, large Axminster rug, green portieres, etc. This room can be divided into two sleeping rooms, each 7½x10 ft. with 3-ft. passageway between. The two staterooms are each 8x7½ ft.; bathroom, separate toilet room, galley and main hall. Staterooms each contain double white enamel bed, chiffonier, wardrobe, etc. Galley fitted with Shipmate range, hot water boiler, white enamel sink, ice-box, etc. Khaki awning over upper deck. The boat is lighted throughout with acetylene gas. Hot and cold running water. Complete outfit except linen and silver. Equipment also includes 500-lb mooring anchor and chain; 12-ft. skiff. Price reasonable. Further particulars upon request. Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3560—For Sale—Auxiliary launch Exile, 32 ft. o. a., 30 ft. w. l. and 9 ft. beam, 30 in. draught. Keel boat, 1,000-lb shoe and inside ballast. 10-h.p. Erd heavy-duty engine, speed 8 miles; 400 ft. sail, jib and mainsail; has balloon jib and spinnaker. Oak

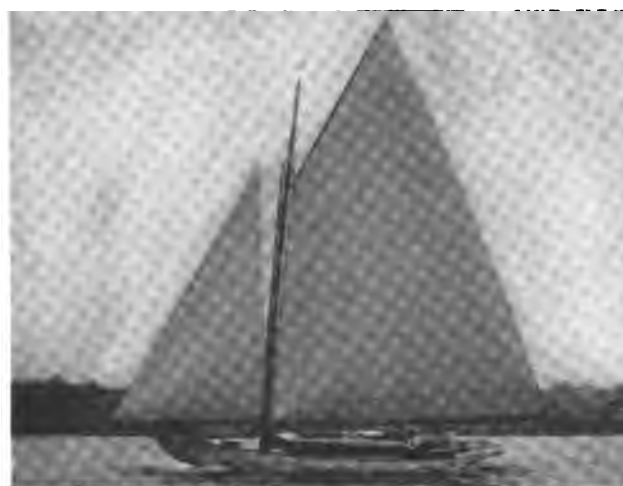
frame, cypress planking; decks canvased; finished in mahogany outside and oak and butternut inside. Has four berths, plush cushions, stuffed with kopec; ice-box and stove. 5 ft. headroom, 12-ft. cockpit. This boat is absolutely modern. Is the expression of the personal experience of a gentleman who has had built ten boats from 25 to 50 ft. long. Is so cunningly designed that she is actually a smart sailer, where most boats of this type are dull. One year old and is offered for \$1,000 f. o. b. cars. Louis Sayer, Canandaigua, N. Y.

* * *

No. 3555—For Sale—Fast cruising knockabout, bright deck and cabinhouse, 46 ft. o. a., 30 ft. w. l., 13 ft. beam, 5 ft. draught, 9,000 lb lead outside ballast; handsome mahogany cabin, two berths in forecabin, two berths and two transoms in cabin, patent w. c. and lavatory, roomy lockers, hair mattresses, bedding, carpet, clock, silverware, mahogany table, stove, dishes, chart-book, night and sailing lights, cabin lighted with lamps or electric lights, 3 anchors, chains, cables, sidesteps, brass binnacle and compass, bright tender, large water tank under cockpit, large ice-chest. Roomy cockpit, cork cushions for seats, awning, mahogany wheel. Sails and covers. Inventory complete. F. H. Cothren, 2 Rector Street, New York City.



3560



3555



914

No. 914—For Sale—High-speed power boat, 50x6.6x3 ft. Speed 18½ to 20½ miles; 70-h.p., 6-cylinder Speedway motor. Built 1909 of mahogany throughout by well-known firm; highest grade construction. Engine room forward, followed by saloon with two transoms, toilet, etc. Very seaworthy and dry for boat of her type. Price very attractive. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3715—For Sale—Hunting cabin launch, Grampus model, 30x9x2.6., professionally built. Keel, stem, stern and frames white oak, planking cedar, copper fastened. Decks white pine, large self-bailing cockpit, mahogany finished. Cabin is large



3715

and roomy and contains toilet, ice-box, linen closet, two full-size transoms and galley all solid mahogany finished. 7-9-h.p. Fulton engine, fitted with Gies reverse gear and controlled from steering wheel in cockpit. Gas and water tank, cushions, car-



3447

pet, lights, anchors and cables, genuine cruiser at a bargain, price \$1,000. Wilbur S. Weeks, Patchogue, Long Island, N. Y.

* * *

No. 3448—For Sale—Very desirable 22-ft. w.-l. sloop, 38 ft. o. a., 9 ft. 6 in. beam, 7 ft. draught, designed and built by Lawley at South Boston, Mass., 1903. Built in the very best manner, with double planking and outside lead ballast of 4,000 lb. Water-tight cockpit 9 ft. long. Cabin is 12 ft. long with 5 ft. 2 in. headroom, finished in mahogany and butternut. Sails made by Cousens & Pratt, 1908. Very fine hollow spars. Good cruising outfit. This boat is very fast and an exceptionally fine cruiser. Reason for selling, owner is building larger boat. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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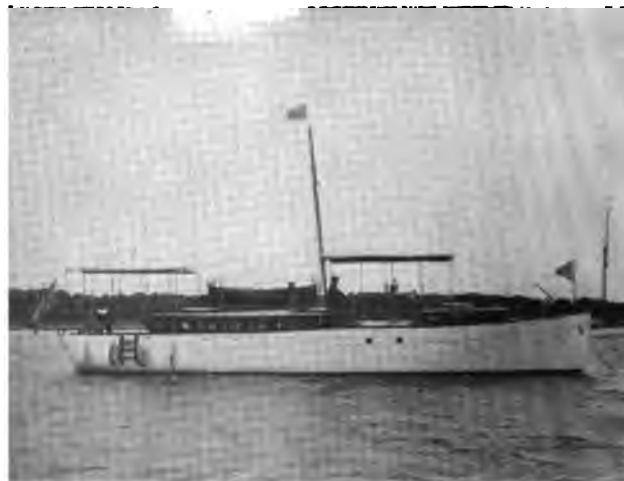
No. 3447—For Sale—Keel auxiliary yawl, 38 ft. o. a., 25 ft. w. l., 12 ft. beam, 5 ft. draught. Cabin has full headroom and is 12 ft. long, arranged as a double cabin with four transom berths and two built-in berths. Toilet room, etc.; berth forward for man. 3,700 lb outside ballast. Water-tight cockpit 8 ft. long. Sails in good condition, 850 sq. ft. in area. 40-gal. water tank. Motor is a double opposed Beaver, 2-cylinder, 18-h.p.; speed 6 miles an hour under power alone. Laid up at North Haven, Me. Can be bought at bargain price. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 6263—For Sale—Latest development of single-screw sea-going gasoline cruiser, 51½ ft. o. a., 11.3 ft. beam, 3.8 ft. draught. Launched 1910. Heavy construction; engine controlled from bridge; stateroom; saloon; berths six; two toilet rooms; large galley; 40-h.p. Sterling (heavy duty), speed 10 to 12 miles. Fully found. Very able craft—intended for Bermuda Race. Reasonable price. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.



3448



6263



3466

No. 3466—For Sale—Cruising auxiliary sloop, 36 ft. o. a., 25 ft. w. l., 12 ft. beam and 3 ft. 6 in. draught. Designed to be the stiffest, ablest and roomiest boat possible for her size. Takes a very heavy breeze to even put her rail down to water. Combination keel and centerboard with cast iron outside ballast thoroughly bolted to keel. Has a remarkably large cabin, over 6 ft. headroom; four wide transom berths over 6 ft. long, ample room for four to live in her for weeks at a time and be perfectly comfortable. Bunk for sailor in forecastle. Toilet with Sands' closet and folding lavatory, clothes closet with shelves and chart rack, two cupboards, storage under berths, storage lockers aft, all roomy and convenient. Galley has a large sink, refrigerator for 300 lb of ice, and very large stove, shelves, etc. Water supply from 55-gal. tank. Very complete cruising outfit including tender, three anchors, cushions, lights, etc. Equipped with 10-h.p. Oriole motor giving speed of approximately 6 miles under power alone. Though the main feature of this fine craft is her extraordinarily large and comfortable cabin, she yet has good speed and can be depended upon to go anywhere in any weather. Very reasonable price. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 27788—For Sale—Marie L, crack Massachusetts Bay keel 22-footer, designed by E. A. Boardman; built by David Fenton Co., Manchester, Mass., 1906. 38 ft. o. a., 10 ft. beam, 6 ft. draught. Very best construction, with cedar planking, copper fastenings and oak frames. Outside lead ballast. 5 ft. 2 in. headroom in cabin, which is handsomely finished in white enamel and mahogany. This boat's cabin is the largest of any in the class, containing two berths, transoms, roomy lockers, w. c., sideboards, etc. Fine suit of sails. This is a very fast boat, and has won scores of prizes. A splendid cruising boat, with complete inventory. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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No. 3711—For Sale—Cat yawl, 40 ft. o. a., 27 ft. w. l., 8½ ft. beam, 6½ ft. draught, 6 ft. 2 in. headroom. 5 tons outside ballast. Built by Read Bros. Everything first-class, white oak frames, yellow pine planking, mahogany trunk, cockpit and trimmings. Good sea-boat, very stiff and able, extra fast going to windward. Splendid type single-hander. One man can handle yacht easily any weather. Toilet, ice-chest, cushions, etc. Round bottom tender. Will need new sails and running rigging. Cost \$2,200, will sell for \$750. Inspectable Fall River, Mass. Andrew Borden, Fall River, Mass., P. O. Box 307.



27788



3711



3729

No. 3729—For Sale—Gasolene yacht, 52 ft. o. a., 12 ft. beam, 4 ft. 6 in. draught. Built in 1906 by day's work, from carefully selected material. Interior quartered oak; about 7-ft. headroom in cabin; ice-box capacity 500 lb; carpet, plush draperies and curtains; two-burner Primus stove, with four lamps; dishes and cooking utensils; separate toilet and lavatory; plush and leather cushions; bedding, linen; four large wicker arm chairs; camp chairs; canvas deck and rail cover; two awnings; binnacle; compass, lamps, flags, etc. Two masts and sails for same; 25-h.p., 2-cylinder, 4-cycle Globe engine, in A-1 condition; automatic oiler; dynamo; Witherbee storage battery; one lap-streak cedar tender, with cover; electric lights and lamps; four anchors, cable and chain. Large clothes closet and ten-drawer bureau; lockers; sleeping accommodation for six people; charts and full equipment for outside cruising. 200-gal. gasolene capacity, and 240-gal. water tanks; flush deck. Everything first-class and will be put in commission for purchaser if desired. Can be seen in New York. Address Charles F. Smith, 825 East 11th St., N. Y. City.

* * *

No. 10807—For Sale—Keel flush deck auxiliary seagoing schooner, 117 ft. o. a., 85 ft. w. l., 22 ft. beam, 14 ft. draught. Steel construction. 70 tons lead on keel. Five staterooms, after saloon, two bathrooms, two extra toilets. Commodious foc'sle. 100-h.p. Standard, new 1906; speed 7 knots per hour. Completely equipped. New sails 1908. Three tenders in davits—naphtha launch. Suitable foreign cruising. Reasonable price. Apply to Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 3883—For Sale—Unusually attractive motor boat, 31 ft. o. a., 29 ft. w. l., 5 ft. 6 in. beam and 2 ft. 4 in. draught. Beauti-

fully finished in mahogany, outside and inside, and copper fastened. Equipped with a 30-h.p. Essex motor, giving her a speed of about 15 miles an hour. Box with cover over engine and



3883

spray-hood. Any one desiring a beautifully built and smart-looking motor boat should not overlook this craft. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 11149—For Sale—Keel cruiser, 56 ft. o. a., 39 ft. w. l., 12½ ft. beam, 8 ft. draught. Designed and built by Herreshoff, 1904. Lead keel. A-1 construction; double planking. Copper and bronze fastenings. Cabin berths six. Headroom 6 ft. Galley. Foc'sle with two berths. Completely fitted including new sails 1910. Exceedingly attractive and smart sailer available at very low price. Apply to the Agents, Seaman & Huntington, 220 Broadway, New York City.



10807



11149



3882

No. 3882—For Sale—Motor boat Sliver. She is 27 ft. long, 4 ft. 3 in. beam, 30-h.p., 3-cylinder, 2-cycle Smalley engine; engine under hinged hood forward. Two cross-seats, seating four persons, including driver. Engine has double carburetor system, one for each cylinder when running full speed, and one for the three cylinders at slow speed. Very sharp bow and broad transom stern. Hood ventilator in forward deck. Gasoline tanks forward, brass fittings, four air-cushions for seats, each suitable for life-preserver; anchor, rope, lines, etc. Tobin bronze shaft, Bryant & Berry speed wheel. Exhaust silencer or muffler, bell and electric whistle; brass side-lights. Cover over hood and cockpit. K. W. magneto and master vibrator, actuated from flywheel. Reverse gear. Insured for \$2,000, actual cost over \$2,200. In perfect condition. Speed over 25 miles per hour. Price, complete, \$1,500. This is one of the handsomest, most comfortable and speedy runabout motor boats of her size on the Atlantic coast, irrespective of cost. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3561—For Sale—46x10 cruiser. Designed by Skene, built 1909, in perfect order. Heavy-duty engine 30-h.p., bridge controlled, auxiliary sails. Copper fastened, gas tanks and piping on deck. Two staterooms, cabin and engine room. Sleeps six. Two Sands' equipped toilet rooms. Fresh water tank. Electric lighted compass in binnacle, barometer. Rudder ball-bearing, Babcock fire extinguisher. One 50-lb, one 100-lb Providence Stockless anchor, one sea anchor. One extra bronze propeller. Fully equipped for long cruise, speed 10 miles. Dr. Thomas L. Gilmer, 31 Washington Street, Chicago, Ill.



3561

No. 1093—For Sale—30x7.10 ft. launch; twin-screw; speed 8 miles. Launched 1908. Exceptional sea-boat. Desirable day



1093

cruiser. Best construction. Located New Orleans. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3554—For Sale—37.6x9x2.8 Barney design. Built 1906, Portland. Magnificent sea-boat; very large saloon, toilet, engine room and galley; specially ample hold, covered locker, etc., space; sleeps six on four berths; headroom 6 ft. 2 in.; 15-20-h.p., 3-cylinder Essex engine; electric light; one-man control; equipment complete; cushions, dynamo and batteries new 1910; speed 10 miles. Whole boat and equipment in first-class condition. Sole reason for selling, building larger boat. W. S. Creevey, 15 William Street, New York City.



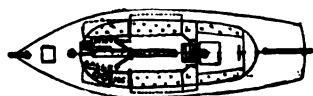
3554



3559

No. 3559—For Sale—Handsome, able cruising launch in best condition. 24 ft. o. a., 6 ft. 6 in. beam, 2 ft. draught; built in best manner 1909. Selected oak keel, stem, and frames; cedar planking copper fastened throughout. Equipped with 8-h.p., 2-cylinder Gray engine, fitted with reverse gear; all controls close to wheel. Speed 8 miles. Comfortable cabin and toilet finished in cypress. Roomy cockpit with stationary awning and side curtains. Boat is tastefully furnished with cushions, curtains, etc.; stove, anchor, cable, lights, whistle, compass. Insured full value until August, 1911. Has cruised Long Island Sound in all kinds of weather. Price reasonable. Inquire J. Harvey Dauphinee, Glen Cove, L. I. P. O. Box 355.

No. 3552—Auxiliary yawl, 35x10.9x3.9 ft. Centerboard. 10-h.p., 2-cylinder Fulton. Two gasoline tanks under cockpit seats. 9-in. iron keel. \$125 worth pig lead inside. 6 ft. headroom throughout. Two berths main cabin. Two full-height lockers. Stateroom, with berth, toilet, and folding lavatory. Big



3552

galley with ice-box, stove and running water. Sails fine condition. Have built house on shore and have use of another yacht only reason for selling. \$1,200. Stored near New York. Metzger, 1528 Tribune Building, New York. Telephone Beekman 5251.



3552

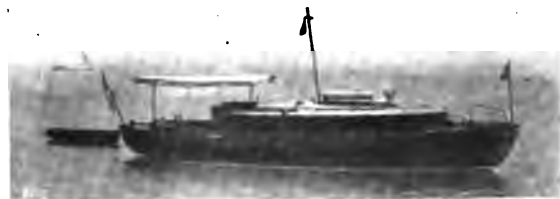


3263

No. 3263—For Sale at attractive figure—One of the Seawanhaka 15-ft. class, 24x15x6x3 ft. 9 in. draught, built by Ayers, 1903; mahogany planked, copper fastened throughout, about 1,200 lb lead on keel. Very fast and seaworthy, good freeboard; cockpit shallow and ample deck room allowing boat to be handled with greatest ease. For price and further particulars apply Gielow & Orr, 52 Broadway, New York City.

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No. 1066—For Sale—Hunting cabin cruiser, 35x9.6x2.6 ft. Built 1907. Equipped with 20-h.p., 4-cylinder Jencick motor (new



1066

1909). Very able, complete and in first-class condition. Owner anxious to sell. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3475—For Sale—Racing dory Nisan. One of the fastest in Mass. Racing Dory Assn. Mower design. New Wilson & Silsby sails of Egyptian cotton. Cost \$37, used about dozen times. Also extra suit of Wilson & Silsby sails, reef points. Hull rigging and spars in first-class shape. Nicely painted. Hoist sail brass track. Last record at Corinthian Club: One first, two seconds, one third, one fourth; fourteen to sixteen competitors. \$55 cash prizes for season. Price \$150. D. H. Woodbury, 53 State St., Boston, Mass.



3475



3558

No. 3558—For Sale or Rent—Cabin raceabout Satana (formerly Rube), 22 ft. w. l., 38 ft. o. a. Designed by Small and built by Graves. Has new suit of sails made in 1911 and bright tender. Cruising quarters for four, air mattresses, ice-box, stove, cruising outfit including charts, etc., and compass set on floor of cockpit lighted by electricity. An excellent racer. Last Summer won series at Northeast Harbor, Me., and annual race at Dirigo, Me. Hollow spars, hollow spinnaker boom, storm and light sails. Hauled out at Camden, Me. Owner going abroad. Apply R. W. Williams, 37 Beck Hall, Cambridge, Mass.

* * *

No. 565—For Sale—Attractive hunting cabin cruiser, 40x9x3 ft. Built 1907 by well-known firm. 20-25-h.p., 4-cylinder 20th Century motor, new 1909. Cabin finished in mahogany throughout.



565

out; accommodations for four; toilet, galley, etc. Very best construction. Excellent bargain. Cox & Stevens, 15 William Street, New York City.

* * *

No. 1117—For Sale—Lawley keel auxiliary yawl; 39.3 ft. o. a., 26 ft. w. l., 9.4 ft. beam, 5.6 ft. draught. In A-1 condition



1117



665

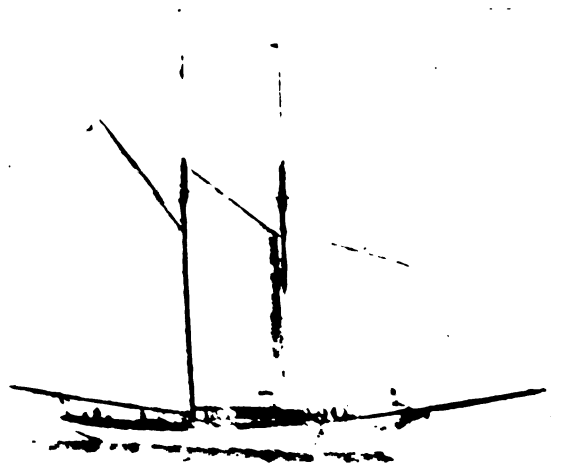
throughout. Very complete equipment. Lead keel 6500 lb. Cabin contains four berths, toilet room, galley, etc. 5-h.p., 2-cylinder motor located under cockpit; speed 5 miles. Round bottom tender. Sails complete and in excellent condition. Very desirable and a fast sailer. Price low. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 665—For Sale—Hunting cabin single-screw gasoline launch, 34.4x7.6x2.10. Mahogany finish and brass fittings. Buffalo 10-h.p. engine, new, 1908. Fully equipped with stove, Curtis closet, dishes, cooking utensils, fully cushioned, curtained and carpeted, awning, compass, mahogany sidesteps, etc. Sleeps four and five comfortably; cockpit self-bailing, mahogany steering wheel; three gasoline tanks, capacity 80 gal.; 35-gal. copper water tank. A fine able boat of the very best material and workmanship, and up-to-date appearance. Speed 9 miles. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3878—For Sale—Famous schooner-yacht. A celebrated ocean yacht race winner. Has cruised in the North Sea, Arctic Ocean and other waters in different parts of the world. 90 gross tonnage, 86 net tonnage. Length 108 ft. o. a., 87 ft. w. l., 22 ft. beam and 14 ft. draught. Would make an ideal yacht to enter in the Boston-Bermuda 1911 Ocean Race, as she is very fast, seaworthy and able. Flush deck. Built in the strongest possible manner from designs of Edward Burgess. Has about 90 tons of lead, 60 inside and 30 outside. Her accommodations are very ample, having four staterooms, bathroom and four w. c's. Her sails and rigging are in good order. Halyards are of steel and made in 1910. This is a very handsome and powerful craft, well worthy of the attention of any one wishing to purchase a yacht of her type. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3878



3875

No. 3875—For Sale or Charter—70-ft. flush-deck cruiser, 16 ft. beam, 3 ft. 4 in. draught. In commission. Over \$3,000 spent on her this year. Newly upholstered in brocade and tapestry; one double, three single staterooms, bathroom, two toilets; piano. Two 24-30-h.p. 20th Century engines. Separate charging plant for storage batteries; electric lights and fans; fresh-water tanks hold 1,000 gal.; three gasoline tanks hold 1,100 gal. Speed 10 real miles. One 21-ft. Atlantic dory, 5-h.p. motor; speed 8 miles; one 16-ft. Mullins steel boat, speed 8 miles; one skiff with revolving chair, one copper-fastened, lap-streak cedar tender. 1,800-candle-power arc searchlight. Sleep seven people separately besides crew. Sails and awnings. Has cruised in the West Indies and Mexico. Ideal warm-weather boat. Now in Florida near Miami. Best pilot in Florida as sailing master. The house seen in the picture is also for sale or rent; fully furnished for season with servants, linen and silver. Finest Winter climate in the world and the best and coolest Summer climate in America. Over forty varieties of fruit, some only grown on this plantation. Pays good interest on investment. Five minutes only in motor boat from house to the celebrated Bay Biscayne tarpon grounds. The largest tarpon ever caught in Bay Biscayne was taken in full sight of the house by one of its guests. Several tarpon have been caught

from the dock. The boat and house make an ideal combination. Address owner, The Tee House Plantations, Lemon City, Fla.

* * *

No. 3556—For Sale—Hunting cabin cruiser, 28x7x30 in., cedar planking, oak frames, copper fastened. Two years old, designed by Mower, oak finish throughout. 8-h.p. Ideal engine, 4-cycle, with reverse, speed 8½ miles. Two 30-gal. copper tanks in water-tight cockpit; sleeps four persons in cabin. Adjustable awning, tender, stove, cushions, whistle outfit and full equipment. A comfortable cruiser, sound, seaworthy, and reliable, safe for any trip. Has cruised to Maine coast and return without a skip. Owner is building larger boat, will sell for \$725. Cannot be duplicated for \$1,200. Address Carrier 798, Jamaica Plain, Mass.

* * *

No. 3557—For Sale—Speed boat Scorpion, 30x4x9 in., 22 in. under propeller. Hull weighs but 900 lb. Has made 24.3 nautical miles with 75-h.p. Built by Burgess for propeller experiments. Now has Brownell-Trebert 30-h.p., 4-cylinder engine, will make 18 miles. May be seen Marblehead, Mass. A. V. de Forest, 1571 Beacon Street, Brookline, Mass.



3556



3557



3895

No. 3895—For Sale—Keel yawl Olive, 21 ft. 6 in. o. a., 19 ft. w. l., 4 ft. 2 in. draught. Sleeps three comfortably. Has galley and complete cruising equipment. Room to install engine under cockpit, if desired. 3,000-lb lead keel. She is the biggest, little boat in these waters, and can be bought at a sacrifice, as owner hasn't time to use her. With her present rig, she is non-capsizable. H. M. Morris, 400 Chestnut Street, Philadelphia, Pa.

* * *

No. 487—Exceptional Bargain—Roomy and able twin-screw power yacht, 70x13.9x3.6 ft. Equipped with two Standard motors giving speed 10-12 miles. Double and single stateroom, 14-ft.



487

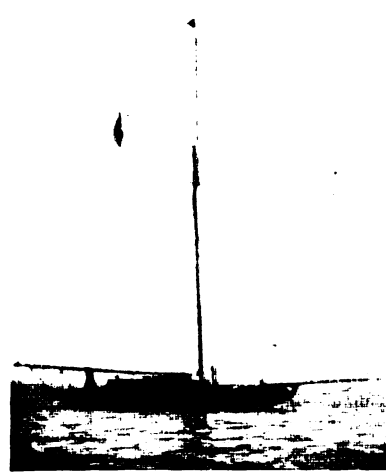
saloon, etc. Acetylene lights. Excellent condition. Fully found. For plans and particulars apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 3891—For Sale—Very desirable keel knockabout. Just the boat for cruising or day sailing. A perfect single-hander. 33 ft. o. a., 21 ft. w. l., 8 ft. beam, 4 ft. 10 in. draught. 3,500 lb



3891



2900

outside ballast on keel. Cabinhouse is 8 ft. long with 5 ft. headroom. Has a water-tight cockpit and very good cruising equipment, including round bottom tender, best hair cushions covered with green denim, awning, binnacle, ice-chest, cooking utensils, two anchors, cable, etc. This boat is of the very best construction and first-class in every respect. Inspectable near Boston. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 2900—For Sale—Attractive, fast and able keel sloop yacht, 52 ft. 4 in. o. a., 35 ft. w. l., 13 ft. 5 in. beam, 6 ft. 6 in. draught. Lead ballast on keel, 7 tons. Best construction; copper fastenings, clinched. Interior finish of mahogany. Single stateroom and saloon accommodate six; two toilets, etc. Sails complete, some new 1908, some 1907. Berths for two in fore-castle. Equipment complete in detail. This yacht has been kept in A-1 condition, no money having been spared. Built by Marblehead Yacht Yard, from designs by Purdon. Only offered for sale on account owner's death. Apply to Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3885—For Sale—Auxiliary yawl, 32x22x7.8x4.8. Two berths aft, one forward; galley under bridge deck; toilet room forward under cabin roof. Ample drawers and lockers. Rebuilt Spring 1910. Cedar planking, oak frames; able, sound, non-capsizable, comfortable and seaworthy. Sails and engine excellent condition, engine new Spring 1909. Inventory complete for cruising, outside ballast iron 2,400 lb, inside lead 500 lb. Engine control and reverse at wheel. Price right for quick sale, am building larger boat. Any broker or T. F. Salter, 5001 Lancaster Avenue, Philadelphia, Pa.



3885



3932

No. 3932—For Sale—Cruising power yacht, 51 ft. long, 12 ft. beam, 4 ft. draught. 4-cylinder, 4-cycle, $6\frac{1}{2} \times 10$ -in. Murray & Tregurtha slow speed engine. Complete cruising equipment including a power tender and a rowing tender. Forward cabin and engine control in pilothouse. Also can control boat and engine from bridge. Forward cabin has double folding spring bed, extension table and sideboard. After cabin has two folding berths and a piano. Boat makes 10 miles an hour. Everything complete for cruising. Can be seen at Murray & Tregurtha's yard, South Boston, by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3919—For Sale—Yacht Clio. Built 1905 by Sheldon at Neponset for W. B. Turner, Boston. Cabin finished by Lawley & Son Corporation, at South Boston. 40 ft. w. l., 55 ft. o. a., 15 ft. beam, 5 ft. 10 in. draught without board, 10 ft. draught with board. Accommodations: Two staterooms, two berths and two sliding transoms in main cabin; two pipe berths in foc'sle. Inventory: One rowboat 12 ft. long, one motor boat 12 ft. long, three anchors, 155 lb., 105 lb., 60 lb., 1 galvanized chain 50 fathoms more or less, 1 new cable, 55 fathoms more or less (1910), one new cable 60 fathoms more or less (1910), side

lights, riding lights, extra lanterns, etc., four good mattresses in cabin and staterooms, two good mattresses in galley; blankets for all berths; bath-tub, dishes, etc., as usually found in yacht; cutlery, etc., as usually found in yacht; linen, such as tablecloths, napkins, etc.; life-preservers, bedding, such as sheets and pillowslips; extra large spirit compass with binnacle light for same; ice-chest built in galley; coal-stove, alcohol-stove, sails (new, 1909) mainsail, main- and gaff-top sail, foresail, forestaysail (jumbo), jib, small staysail, large staysail, jibstaysail, balloon jib (spinnaker); iron ballast inside; iron shoe on keel; cabin finished in mahogany; cabin trunk painted white on inside; two water tanks, 65 gal. each; set wash-tanks with water to same; large awning; four 5-gal. carboys for spring water; all needed tools. Owned by John S. Phillips, New York. Register (temporary) Plymouth, Mass.

* * *

No. 3884—For Sale—A very handsomely designed and well-built launch, 38 ft. long, 8 ft. beam and 3 ft. draught, equipped with a 10-h.p. Murray & Tregurtha Co. motor. The launch is finished in quartered oak; upholstered in plush; brass trimmings. She is fully furnished, and everything is in first-class order. Price \$1,000. Benjamin Thompson, Portland, Me.



3919



3884



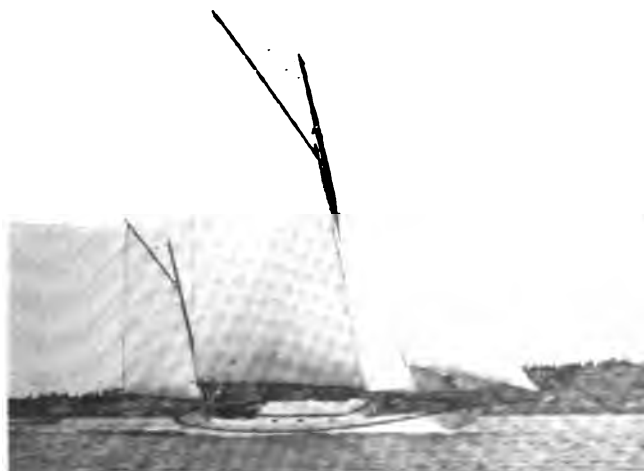
653

No. 653—For Sale—Greatest bargain of the year, modern cruising sloop, keel with small centerboard, 53 ft. o. a., 38 ft. l. w. l., 13 ft. 9 in. beam, and 6 ft. 5 in. draught. Designed by T. L. Ferris, and built by Brown, Tottenville, Staten Island, in



653

1898. Roomy cabin, 6 ft. 2 in. headroom; sideboards, lockers, etc. Two good staterooms finished in mahogany, galley and forecabin, toilet room. About five tons of outside lead ballast; very heavily constructed, yellow pine planking, oak frames,



3890



6279

etc. The above cut shows boat on railway and does not do her justice. Complete with tender, cruising equipment, etc. As owner is unable to use the boat a cash offer of \$1,200 will be accepted for an immediate sale, which is practically a junk price. For inspection permit apply to John G. Alden, 27 Kilby Street, Boston, Mass.

* * *

No. 3890—For Sale—Lawley built yawl, 39 ft. 6 in. o. a., 25 ft. w. l., 10 ft. 3 in. beam, 5 ft. 8 in. draught. Outside lead ballast 6,300 lb. Headroom 6 ft. W. c. and lavatory. Two berths and two transoms in cabin. Pipe berth forward for man. Cruising inventory including tender. An unusually well-balanced yawl. In first-class order. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 6279—For Sale—Steel seagoing auxiliary steam cruiser. Brigantine rig, single screw. 160 ft. o. a., 130 ft. w. l., 26.4 ft. beam, 14 ft. draught. Launched 1899. Teak deck trim. 93 tons lead ballast. Six staterooms, two saloons and three baths for owner and guests. Compound engine. Almy boilers. Speed 8 knots, consuming four tons coal daily. Completely equipped. All modern conveniences. Cruised abroad. Reasonable price entertained. Address Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 202—For Sale—Herreshoff Bar Harbor "thirty." 49 ft. o. a., 10.5 ft. beam, 7.32 ft. draught. Received extensive improvements in 1910. New mahogany cabin trunk, new galley, water tanks and w. c. 2-cylinder, 7-h.p. engine installed 1910 gives speed of 6 miles, but would be removed and allowance made if purchaser desires. Herreshoff sails in good condition, two anchors with chain and cable. Splendid equipment of bedding, linen, crockery, and other cabin furnishings. Apply to Charles P. Burgess, 40 Central Street, Boston, Mass.



202



3931

No. 3931—For Sale (see illustration)—Semi-cruising speed launch, 60x9x3, built by Herreshoff. The very best of her type. Expense wholly disregarded in construction. Double planked; outer skin specially selected mahogany; inner, cedar; copper riveted and brass screw fastenings; absolutely tight. Owner's stateroom and toilet under turtle deck, cockpit forward, separate connection with saloon and galley aft. Engine amidships. Large after deck with quarters for crew below. Finished in solid mahogany throughout. Complete inventory including Herreshoff tender. 100-h.p., 6-cylinder Speedway motor equipped with water-cooled exhaust, K. W. high-tension magneto, powerful whistle outfit, etc. Speed 15-18 miles per hour. Entire outfit in A-1 order; requires no outlay; has received best of care at all times and been little used owing to owner's absence abroad. Boat is admirably adapted for gentleman's ferryboat; would also make a fine tender for large racing yacht. Will be sold at a sacrifice owing to owner's inability to use. Apply to your own broker or direct to Owner, 458 19th Street, Brooklyn, N. Y.

* * *

No. 3881—For Sale—25-ft. w. l. sloop built by Lawley in 1902 from Crowninshield designs. 40 ft. o. a., 10 ft. beam and

6 ft. 3 in. draught. Double-planked with Spanish cedar, finished bright with copper fastenings and oak frames. 6,000 lb of lead on keel. Cabin finished in mahogany and oak, with two very wide transoms, w. c. Pipe berth forward; refrigerator, water-cooler, etc. 11-ft. Lawley tender. Edson steering gear, mahogany wheel, cushions, curtains and complete outfit. Very fast and a prize winner. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3935—For Sale—Open boat cruiser Querida, built with deference to the three S's, safety, strength and seaworthiness. Probably the smallest boat afloat that has cruised from Lake Champlain to Hampton Roads and Montauk. See *Motor Boating*, January and February, 1911, for descriptions of boat and cruises. 22½x7 ft. Very heavy construction throughout, yet agile, and seldom pounds in heavy sea. 4½-h.p. Lathrop recently overhauled by makers, gives speed 7½ miles. 25-gal. copper tank, magneto, Schebler carbureter. Full set pantasote cushions. Water-proof melon spray-hood. Satisfying price. Write or 'phone Bradford Burnham, Doubleday, Page & Co., Garden City, N. Y.



3881



3935



3938

No. 3938—For Sale—If you want the finest 37-footer on the Atlantic coast, take a look at the Jessie L., at Baker Yacht Basin, Quincy Point, Mass. Designed and built last Summer by high-class builder, been run less than four days; mahogany finish. 6 ft. 2 in. headroom throughout; cedar planking to water-line; hard pine above, copper fastened. Sleeps six people comfortably. Equipped with Murray & Tregurtha 20-30-h.p., 4-cylinder engine controlled at bridge. Speeds 10 to 12 miles. Everything of the very best, extra well found and up-to-date. 37x8.6x3. Very fine sea-boat; sold for no fault, owner building larger boat. F. R. Knowlton, owner, West Acton, Mass.

* * *

No. 3934—For Sale—One of the Massachusetts Bay 15-ft. class. 25 ft. o. a., 8 ft. beam, and 4 ft. draught. Cedar plank-

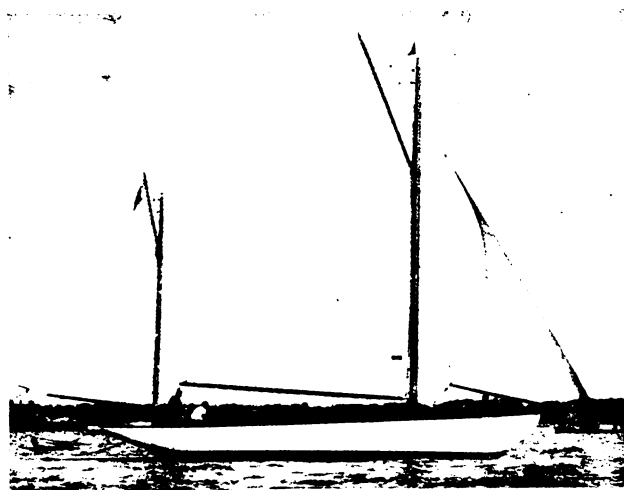


3934

ing and copper fastenings. Built in 1905. Just the boat for boys to have a good time in. She is very fast and can be



3911



2645

handled with the greatest of ease. Price only \$300. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. Telephone, Main 23.

* * *

No. 3911—For Sale—Hunting cabin launch Mary, nearly new, built of cedar and mahogany with oak frames. 32 ft. long by 8 ft. beam, draws 2 ft. 6 in. Headroom in cabin 5 ft. 9 in. Copper fastenings throughout. Fine toilet fittings. Bulkhead at forward end of cabin. Excellent refrigerator. 15-h.p., 2-cycle, 2-cylinder Stuart engine, latest type. Fine reverse gear. Engine in cockpit accessible to man at wheel, making a one-man boat. Able and fast and seaworthy; good equipment; speed about 8 miles. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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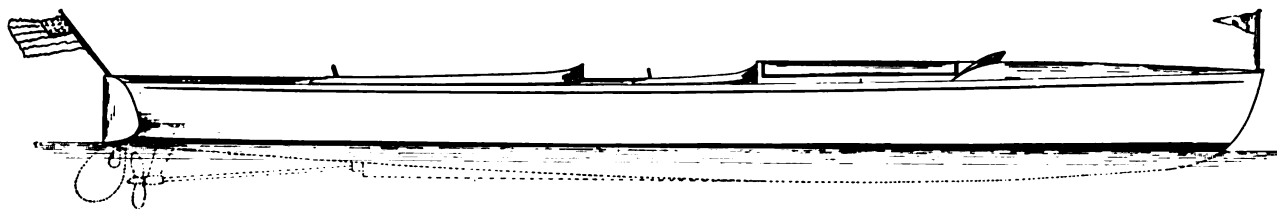
No. 2645—For Sale—In every way, the most desirable, light draught, auxiliary cruising yawl of its size. 55x38x15x2.8 ft. draught. Designed by Gielow, built 1906. Copper and galvanized fastened. Hackmatack knees, oak frames, yellow pine planking. Inside lead ballast. Interior white and mahogany; 6.3 ft. headroom. Stateroom, four transom berths in cabin; toilet room, galley and forecabin with two berths. Engine 12-h.p. under forward end of cockpit; speed 6 miles. Fine, able, cruising yacht; superior sea-boat. White pine deck, mahogany plank-sheer, cabin trunk, skylights, etc. Everything of the best. Well fitted out. Price attractive. Plans, etc., from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 14—For Sale—Steel steam yacht, 94x14x6 ft. Exceptional sea-boat; excellent accommodation. First-class condition. For further particulars, plans, etc., apply to Cox & Stevens, 15 William Street, New York City.



14



1063

No. 1063—For Sail—Fast runabout, 35x4.6x2 ft. Speed 20-22 miles; 45-h.p. Jencick motor. Built 1909; best of construction. Cockpit accommodates eight persons comfortably. Engine located forward under mahogany hood. Cost \$3,400. Price reasonable. Apply to Cox & Stevens, 15 William St., N. Y. City.

* * *

No. 287—Bargain—Keel cabin raceabout, 32 ft. o. a., 21 ft. w. l., 7 ft. 6 in. beam, 5 ft. 3 in. draught, designed by Purdon, built by Marblehead Yacht Yard in 1900; copper fastened; 3,000 lb outside lead; house added 1909, about 4 ft. 3 in. headroom. Is a very fast sailer and has won many prizes. Has

pump, compass, bell, cushions, skiff, side curtains, etc. A splendid boat for day sailing or short cruises. Can be seen near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3284—For Sale—A splendid sea-boat for one of her type; in first-class condition. Speed 9 to 10 miles. Cockpit seats eight; has made trips with 15 or 16 persons. Engine



287

hollow spars, two suits of sails, one by Ratsey, 1909; anchor, cable and dinghy; new blocks, rigging, turnbuckles. With slight alterations can be made to fit Class "R," Universal Rule. For sale at a low figure. Apply to John G. Alden, Yacht Broker, 27 Kilby Street, Boston, Mass.

* * *

No. 3933—For Sale—25-ft. motor boat, 3 ft. draught. Equipped with a Globe engine, giving her a speed of 8 miles an hour. Fully equipped with anchors, lights, flag-poles, flags,

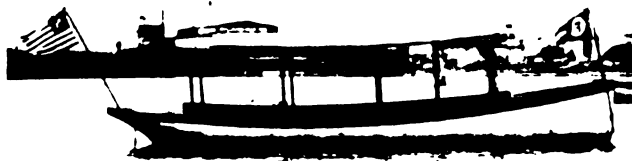


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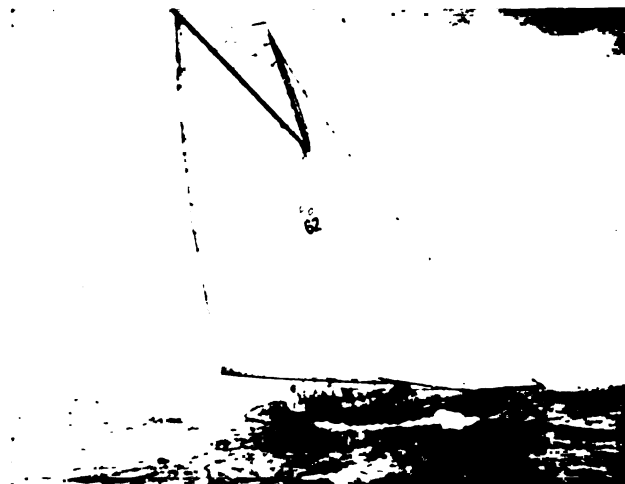
new 1909. Equipment includes reverse gear, whistle, etc. Price and further particulars Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 3898—For Sale—Keel, cabin knockabout. Length 31 ft. 9 in. o. a., 18 ft. w. l., 7 ft. 2 in. beam, 5 ft. draught. Designed by B. B. Crowninshield; built by L. D. Huntington of New Rochelle, N. Y., 1905. Boat is in good condition; comfortable cockpit with mahogany seats; four lockers, two suits of sails; dinghy, etc. Is a fine combination of speed and comfort for short cruises. Price reasonable. For particulars apply Louis F. Schwartz, Jr., 149 Centre Avenue, New Rochelle, N. Y.



3933



3898



2414

No. 2414—For Sale—Express steam yacht. Built by Seabury Company, 1902. Dimensions: Length 100 ft., beam 12 ft., draught 4 ft. Accommodations include dining saloon forward, one double stateroom, saloon and bathroom aft. Finished in mahogany, white and gold. Twin screw. Two triple-expansion engines. New Seabury boiler, 1907. Average speed about 20 miles per hour; has made 23½ miles. Electric lighted and steam heated throughout. As good as anything of the type and size. Yacht is in excellent condition and ready for immediate service. As economical to operate as gasoline yacht of the same size and speed. Dimensions allow going through canals to Great Lakes. Her light draught also adapts her for Southern and other inland waters. Can be had for half of cost to build, as owner cannot use. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 1398—For Sale, price low—Thoroughly excellent, 64 ft. o. a., flush deck and cockpit, keel auxiliary schooner yacht. Lead ballast. Interior, mahogany, over 6 ft. headroom. Double and

single staterooms, two berths and two transoms in cabin, toilet room, good galley and forecastle. Engine 25-h.p. Ample water and gasoline capacity. Excellent cruising outfit, including launch, dinghy, working and light sails, anchors, chains, lights, and cabin equipment. Crew of three sufficient. An excellent sea-boat and has been well taken care of. Plans, price, and further particulars from Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 649—For Sale—Able cruising keel knockabout, 26 ft. o. a., 18 ft. l. w. l., 8 ft. 1½ in. beam, 3 ft. draught, built by Townsend & Osgood in 1902. 400 lb ballast inside, 1,600 lb outside. Comfortable cabin for cruising with transoms, lockers, etc. Sails new 1909, including spinnaker, storm jib. Standing rigging new 1908. Two anchors, two cables, round bottom tender; new mast 1910: lights, compass, water tank, awning. Is exceptionally able and has always been given best of care. For sale at a low figure. Inspectable at Boston. Apply to John G. Alden, Room 16, 27 Kilby Street, Boston, Mass.



1398



649

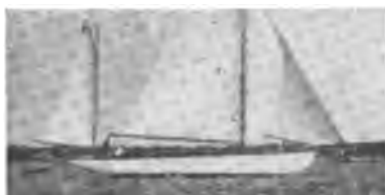


3894

No. 3894—For Sale—Speed launch, 37 ft. long, 5 ft. 6 in. beam, 2 ft. 2 in. draught. Built by Lawley in 1907 from designs of N. L. Skene. Is in perfect condition and does not leak a particle. Has gone 33 miles per hour. Is to be sold without engine, as owner wishes to use it in a hydroplane. Would make an excellent runabout with small engine. Price \$500. Also for sale, 25-h.p., 4-cylinder, 4-cycle Jager engine in good condition. Price \$500. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1129—For Sale—Shoal draught auxiliary yawl, 55 ft. o. a., 38 ft. w. l., 15 ft. beam, 2.8 ft. draught. Most desirable of type and size available. Built 1906. Stateroom, large saloon, etc.



1129

15-h.p. motor, speed 6 miles. Fully found. Available at less than half cost. Full particulars from Cox & Stevens, 15 William Street, New York City.

* * *

No. 3877—For Sale—11-ft. power tender built by Lawley, June, 1908; 2-h.p., 2-cylinder, 4-cycle, make-and-break Buffalo



3877



3896

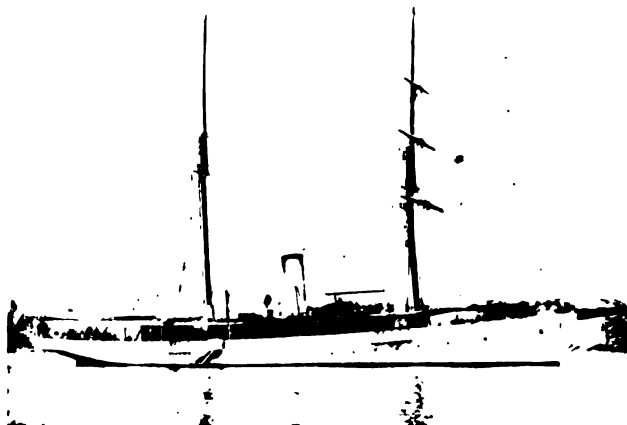
motor, reversible propeller, two side gasoline tanks, bilge pump, oil gun, canvas cover, full set of tools, flag-poles, battery and tool locker, cedar planking, copper fastenings, with mahogany trim, seats six; capacity 1,100 lb dead weight; speed 6 miles, tows 30-footer 2 knots, and 21-ft. knockabout over 4 knots; has never leaked; speedy, able, handsome, dry, dependable; total running expenses \$16 per year. Address A. L. Dempsey, 7 Congress Street, Boston, Mass.

* * *

No. 3896—For Sale—Very fast and able 22-footer, Medric II, designed by Small Brothers, and built by Hodgdon Brothers in 1905. 38 ft. o. a., 22 ft. w. l., 10 ft. beam, 6 ft. 7 in. draught (keel). Well constructed, copper fastenings, oak frames, etc. Outside lead ballast, good headroom in cabin. Wilson & Silsby racing sails (1910), 900 sq. ft. Also full set light sails. Comfortable craft. Full cruising equipment. Winner of many prizes. Permanent winner Possner Cup, champion Class P, N. B. Y. R. A., 1910. Apply to Walter B. Frost, 48 Custom House Street, Providence, R. I.

* * *

No. 1766—For Sale or Charter at reasonable prices; now in commission—Auxiliary, brigantine rig, steel steam yacht, 146x130x27x9.6 ft. draught. Has centerboard. Is exceptional sea-boat, having been on many long cruises. Steaming speed 10 to 12 knots; good speed under sail alone. Arranged for electric light and hot water service without having steam on boilers, and therefore very economical to maintain. Interior, mahogany and white. Main saloon, chart room and smoking room. Three double, one single stateroom, bathroom, four toilets. Galley on deck. Crew below forward. Steam heat. Speed launch. Well outfitted. Price, plans, etc., Gielow & Orr, 52 Broadway, New York City.



1766



691

No. 691—For Sale at a low price—Auxiliary keel cruising yawl designed by Binney, built by Lawley, 37 ft. o. a., 26 ft. w. l., 9 ft. beam, 6 ft. 6 in. draught; flush deck with raised companionway and skylight, strongly constructed, absolutely tight, full headroom, pole masts with new sails, water-proof sail covers, boat boom, has roomy cabin with two gas pipe bunks and mattresses, comfortable transoms, sideboards, drawers under forward, toilet and Sands' lavatory forward of which is large galley and forecastle. Well equipped and furnished having green velour hair cushions with backs, cockpit cushions, mattresses, brass and mahogany binnacle, cabin clock, cabin lights, awning and skylight covers, two anchors, chain, rope, double winch, running lights, riding light. Has 50-gal. water tank. Handsomely finished in mahogany throughout, 5-h.p. Palmer engine under cockpit floor, giving speed under power of 5 miles an hour, one ton of inside lead, about $2\frac{1}{2}$ tons outside iron. A most complete and handy little cruiser in first-class condition in every way, could not be duplicated for less than \$4,000, is offered for sale at a very low figure as owner is unable to use her. Located near Boston. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 5511—For Sale—Twin-screw gasoline cruiser. Dimensions: Length 70 ft., beam 15 ft., draught 3 ft. Built 1907. Double hull construction. Accommodations include three staterooms, saloon and bath. Has four boats. Motor power is two Grant Ferris, 4-cylinder motors, 30-h.p. each. Speed 10 miles per hour. Adapted for use in Florida and other inland waters. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 3874—For Sale—Raceabout, designed and built by Lawley of South Boston to conform to the 21-ft. class of the Beverly Yacht Club. 32x21.10x9.1x3.6. Centerboard in keel. 3,000 lb lead outside. Copper fastened. Double-planked. Hollow mast. Self-draining cockpit. Good cabin. Air-chambers sufficient to float her. Winner of season cup Wianno Y. C. and of many races. In excellent condition. A remarkably good weather boat, suitable for racing, day sailing and limited cruising. To be seen at Cotuit, Mass. Apply to Frank Bowne Jones, 29 Broadway, New York City, or Vaughan D. Bacon, Barnstable, Mass.



5511



3874



296

No. 296—For Sale or Charter—Handsome twin-screw power yacht, length o. a. 65 ft., l. w. l. 56 ft., beam 13 ft., draught 4 ft. Built in the best possible manner by Williams & Whittelsey, from designs of Morgan Barney. Oak frames, hard pine planking, steers from bridge and pilothouse. Owner's accommodations consist of large main cabin aft sleeping four, stateroom with double berth, lockers, etc., and roomy pilothouse 10 ft. long, sleeping two, finished in mahogany; owner's and crew's toilets. Two 25-h.p. Standard engines just overhauled at factory in perfect condition, giving a cruising speed of 12 miles an hour. Electric lights throughout, independent dynamo. Complete inventory, including cedar tender, power launch with new 1911 2-cylinder Palmer engine, new ice-box, searchlight, compass, binnacle, deck chairs, awnings (new), complete interior furnishings. Has just been thoroughly overhauled at expense of \$3,000, and is in most exceptional condition throughout and can be placed in commission at slight expense. Special attention paid to ventilation. Very desirable boat for Southern and all-around cruising. Offered for charter during Winter and Summer months. For sale at low figure. Apply to J. G. Alden, Yacht Broker, 27 Kilby Street, Boston, Mass.

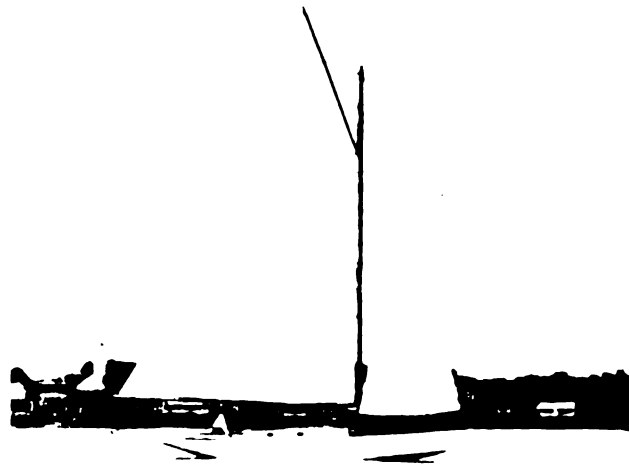
No. 3253—For Sale—Attractive and comfortable cruising yawl, 32 ft. o. a., 26 ft. w. l., 11 ft. 6 in. beam, 5 ft. draught. Good freeboard and fast sailer. Cabin has two long transoms on each side with storage space under. In forward end of cabin is the galley, ice-box, storage locker and toilet. In after end two full-length lockers. 6 ft. headroom in cabin and space to install engine if desired. Good size self-bailing cockpit; steers with wheel. Price and further particulars from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3480—For Sale—Beautiful cruising keel knockabout, 32 ft. 6 in. o. a., 21 ft. w. l., 7 ft. 9 in. beam, 5 ft. 9 in. draught. Built at Marblehead in 1904 in very best manner. A very fast, able and easily-handled craft. Her accommodations are unusually ample for a boat of her size. Cabin finished in bright cypress. Companionway, etc., are of mahogany. Her cockpit is not only self-bailing, but is so arranged that her scuppers do not flood at any angle of keel. This boat has had the best of care, and is to be sold only for the reason that the owner is going abroad. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3253



3480



2151

No. 2151—For Sale—Splendid fast, half cabin launch, 40x8x3.4 ft. draught. Speed 13 to 14 miles. One of the handsomest boats of her type. Has always had the best care; is absolutely in good condition. Decks are mahogany, also the interior and exterior of cabin. There is a narrow deck on each side of cabin and cockpit. Cabin fitted with deep glass windows, and is attractively furnished; toilet and buffet at after end. A sliding door separates cabin from cockpit. A 25-h.p., 4-cylinder engine is near forward end of cockpit, around which are seats. Price and full particulars, Gielow & Orr, 52 Broadway, New York City.

* * *

No. 1862—For Sale—Gasolene cruiser, 47½ ft. o. a., 9½ ft. beam, 3½ ft. draught. Exceptionally well built; copper fastenings throughout. Large pilothouse and saloon berth four. Engine room sleeps two more. Toilet, galley; 20-h.p. 20th Century.



1862

Speed 11-12 miles. Cruising inventory. Always well owned and to-day in perfect condition throughout. Just right for ordinary coast cruising. Very low price. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.



3320½

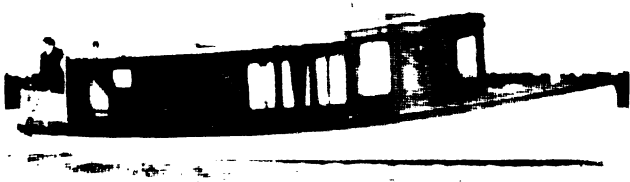
No. 1568—For Sale—Desirable cabin launch, 40x10x2 ft. draught. Construction and condition of the very best. Boat is divided into two compartments; the after one contains two transoms on starboard side, with 200-lb ice-box forward. On port side at after end is another transom, forward of which comes pantry, forward of which is enclosed toilet room. Engine situated in this after compartment is a 4-cylinder, 4-cycle Globe, 16-h.p. Next forward separated by a sliding door is the main cabin; there are two extension transoms on each side. Price and further particulars apply Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 3320½—For Sale—Well-known schooner-yacht Quickstep. Has record of very successful racer in her day; designed by Burgess, constructed by Piepgrass and rebuilt at Morse Iron Works in 1906. Steel construction, in first-class condition. Has a gasolene launch, a gig and dinghy. Large and roomy state-rooms and cabin; liberally and fully equipped in furnishings. Three toilets, fireplace in cabin. Quickstep is out of water and can be inspected. Price \$10,000. E. B. Havens, 62 William Street, New York City.

* * *

No. 3871—For Sale—Glass-cabin launch Katherine, built 1908. 36 ft. o. a., 9 ft. 6 in. beam, 3 ft. 6 in. draught. Cedar planking, oak timbers. Tight cockpit, self-bailing. 24-h.p. heavy-duty Buffalo engine. Speed 9 miles an hour. Cabin over 6 ft. headroom. Cabin and cockpit finished in oak and mahogany. Three steering wheels, one-man control. All trimmings brass. Brass awning-frame. Searchlight. Prest-o-Lite tank. Gasolene tank on each side of cockpit under seats; capacity 40 gal. each. Boat built by the day in best possible manner; should be seen to appreciate construction. Can be seen any time. Apply to James L. Hammond, Mattapoisett, Mass.



1568



3871



3889

No. 3889—For Sale—Steam yacht. Flush deck, 117 ft. o. a., 12 ft. 9 in. beam, 5 ft. 4 in. draught. Herreshoff build. Fore River engine, triple-expansion. Almy boiler. Does 14 miles and better. Exceptionally economical in fuel. Two double state-rooms. Toilet. Completely overhauled last Summer; new awnings, upholstery and fittings. In fine condition throughout. Unusually comfortable and speedy boat. Offered at a bargain. Apply through your broker to Room 217, No. 1 Broadway, New York City.

* * *

No. 3925—For Sale—Power tender, 12x4.3x8 in. 3-h.p. Ferro engine; bright cedar hull, copper fastened; brass fittings, mahogany trim and gratings; fully equipped, lights, whistle, anchor, cable, khaki cover, oars, etc., and mooring. Reasonably fast,



3925

good carrier. Has been used to tow a 32-ft. catboat with good results. Can be seen in Brooklyn. R. B. Cook, 10 Bridge Street, Manhattan, New York City.

* * *

No. 3688—For Sale—Cape cat, 23 ft. 10 in. o. a., 11 ft. beam, 23 ft. 1 in. w. l. Sleeps four on transoms. Water-tight cockpit.



3688



3686

Steers with wheel. Three steps into cabin. 5 ft. 5 in. headroom. Mast, sail and rigging new 1910. Everything in fine condition. Able, strong sea-boat. Cup and prize winner every year, racing fastest cats on Atlantic coast and Interbay champions. Wins prize money enough each year to pay all running expenses. Fully equipped, cushions, dishes, cutlery, large refrigerator, compass, side lights, riding light, two anchors and rode, charts, etc. Address R. J. Carpenter, 16 Norwood Street, Winchester, Mass.

* * *

No. 3686—For Sale—Auxiliary sloop, 33x28x12. A-1 condition; thoroughly overhauled last Summer. Interior finished in white enamel and mahogany. Toilet room. Two fresh-water tanks, ice-boxes, oil-stove, dishes, etc. Sails and spinnaker in good condition. Standing rigging new Spring, 1909; running used three seasons. Sailing and anchor lights, two anchors and chain cable, small boat. Will sell with or without motor, which is a 14-h.p. Cushman. Great bargain for prompt sale as have no use for her. Address W. S. Waterman, 300 Chestnut Street, Philadelphia, Pa.

* * *

No. 3687—For Sale—On Chesapeake Bay, Ojigwan, 34x22x8.6 x5.4. This is a combination that is seldom found; a fast racer that is built as strong as a cruiser and has proved satisfactory in both cases. Designed by Brophy, built by Huntington in 1905; 3,000 lb outside lead ballast. Hollow mast and gaff. Sails by Griffon. Good cabin with 4 ft. headroom and toilet, and has large cockpit. Canvas-covered deck. Inventory includes: Mainsail, jib, No. 2 jib, balloon jib and spinnaker; two anchors and cables, cooking outfit, two Jewel oil-stoves, cabin cushions, anchor and sailing lights, lap-streak cedar tender, etc. Everything necessary for cruising or racing. Price low if sold early. Apply to C. Lowndes Johnson, Easton, Md.



3687



2377

No. 2377—For Sale or Charter—Modern auxiliary ketch, new, 1910. Length 97 ft. o. a., 76 ft. w. l., 20 ft. beam, 4 ft. 6 in. draught; built from my design by the well-known firm of A. C. Brown & Sons, 1910. Flush deck, with cockpit. Construction of the best, hull copper fastened. Equipped with a 4-cylinder, 40-65-h.p. Murray & Tregurtha engine, speed 8 miles. Has complete electrical equipment. Accommodation consists of two double and two single staterooms, two bathrooms, one of which is a shower, large main saloon with transom berths, sideboard, etc., engine room, galley, etc. Interior finish staterooms, etc., white enamel; saloon, hardwood. Ratsey & Lapthorn sails; two boats and one launch; complete equipment. Excellent sea-boat. Has cruised from Key West to Labrador. Only reason for selling is on account recent death of owner. Inspection invited. For full particulars regarding price, plan and location consult William Gardner, 1 Broadway, New York City.

* * *

No. 3879—For Sale—Steam yacht suitable for yacht or passenger service, licensed for 150 passengers. Length 90 ft. o. a., 72 ft. w. l., 16 ft. beam, 6 ft. draught. Built in 1895 by Hatha-



3879

way of New Bedford, Mass. Compound engine. Almy water-tube boiler new in 1900. Speed 12 miles per hour. One life-boat, one cedar and mahogany boat. She is a handsome, strong and serviceable craft, and will be sold at a great bargain. Apply for further particulars to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 4250—For Sale—Open jib and mainsail, 20x18x7x14 in.; built by J. H. Perrine, Barnegat, N. J., 1910; oak frames, cedar planking; 500 lb inside lead ballast. This is practically a new boat, has been but little used; has had best of care and is all in perfect condition. Easily handled and remarkably able for boat of her size. Inspectable near New York. Price \$225. Apply William P. Kiggins, Yacht Agent, 45 Broadway, New York City.



4250



1064

No. 1064—For Sale—Desirable motor yacht, 63 ft. o. a., 53 ft. w. l., 12.6 ft. beam, 3.10 ft. draught. Speed 11 to 13 miles; 70-h.p. 20th Century motor. In A-1 condition. Selected mahogany finish throughout. Large bridge and after deck. Pilothouse and large saloon (15 ft. 6 in. long) accommodate six. Large galley. Electric lights, searchlight, etc. Completely found. Constructed by well-known firm of best materials. Inspectable near Norfolk, Va. Offer desired by Cox & Stevens, 15 William Street, New York City.

* * *

No. 1049—For Sale at Bargain—Twin-screw motor yacht, 70x15x2.6 ft. Located in Florida waters; in commission. Built



1049

1907. Accommodations include three staterooms, pilothouse, saloon, toilet and bathroom, etc. Speed 10 miles; two 30-h.p., 4-



3476

cylinder, 4-cycle motors, new 1908. Electric lights. Very comfortable craft. Reasonable offer desired soon as possible as owner is going abroad. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 6029—For Sale—An unusual gasoline yacht, 94 ft. o. a., 75 ft. w. l., 15½ ft. beam, 6 ft. draught. Twin-screw; electric lights; sleeps 14 besides crew; bridge steering gear. Passed British Lloyds' survey last Fall. A power cruiser possessing all of the appearance and staunchness of a steam yacht, with the comfort and economy of a motor boat. Inventory and equipment exceptionally complete. Can be bought right or chartered. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

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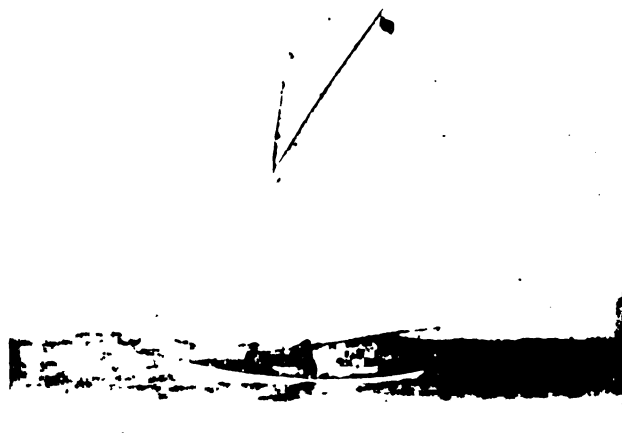
No. 3476—For Sale—Auxiliary cruising keel yawl, Florence, with tender and complete inventory; 29 ft. o. a., 19 ft. w. l., 8 ft. 6 in. beam, 5 ft. draught; roomy cabin 5 ft. 8 in. headroom; 7½-h.p. Buffalo engine; ballast, iron on keel, lead inside. This boat is sound, in excellent condition and no reasonable offer will be refused as owner is obliged to sell. Now at Nock's Yard, East Greenwich, R. I. Address H. R. Westcott, 68 Wood Street, Providence, R. I.

* * *

No. 3474—For Sale—Polemast sloop Usona. A bargain. Fast and able, having won many prizes; is a good cruiser, having cabin with four hair mattresses, pillows, carpet, etc., and is an exceptionally good boat for day sailing, being handy and roomy. 1,000 lb lead ballast, all inside. Length 34 ft. o. a., 23 ft. w. l., 10 ft. beam, 20 in. draught. Two suits sails in fairly good condition. Balloon jib and spinnaker almost new. Storm jib and all racing spars complete. This yacht is in splendid condition and is a bargain for \$475 cash. For further information, write to J. R. Peake, Merrimac Apartments, Norfolk, Va.



6029



3474



1986

No. 1986—For Sale—Bargain figure; modern yawl. Length 58 ft. o. a., 36 ft. w. l., 12 ft. beam, 8 ft. draught. Built by B. Frank Wood in 1903. Construction: Mahogany planking, copper fastened. Accommodations consist of one stateroom, one quarter berth, cabin with two transom berths, galley, toilet room and forecabin. Interior finish white and mahogany. Headroom 6 ft. 6 in. Standing and running rigging in A-1 condition. Complete suit of sails, two boats, etc. Very complete inventory. The boat is very fast as well as being a fine sea-boat, and must be seen to be appreciated. For further particulars, such as plan, price and location, apply William Gardner, 1 Broadway, New York City.

* * *

No. 3929—For Sale—21-ft. knockabout Opitsah II. John R. Purdon designed and Jensen built her in 1900, in which year she won the Marblehead Championship. She is as sound as ever and very able and fast, especially in a blow. She is fully equipped as follows in specifications: Specifications: Length on water 21 ft., 30 ft. 6 in. o. a., 5 ft. 6 in. draught, 7 ft. 6 in. beam. Sails new



3929

in 1909, by Wilson. Ballast 3,500 lb lead in keel. Tender 12 ft. cedar and mahogany. Ground tackle, 60-lb Providence stockless and 40-lb common anchor, 25 fathoms 1¼-in. cable (full insurance requirements), lights, Manning-Bowman alcohol-stove, light sails. In short, a complete cruising outfit in A-1 condition from keel to truck. She can be seen at Crampton's Ship Yard, Morris Cove, New Haven, Conn. Price \$550. Address G. W. Gregory, care Mercer Automobile Co., Trenton, N. J.

* * *

No. 3937—For Sale—Knockabout, 30x20x7.6x4, very able and fast; last Summer sail area increased. Sails and spars all new last Summer; very roomy cabin, 5 ft. headroom; large cockpit, all finest mahogany and new last Spring. Water-tight compartments both ends; non-sinkable; 150-lb galvanized mushroom and chain for mooring; complete rigging now being made; tender, transom cushion pillows perfect condition. Purchaser will get a boat the upkeep of which will be no more than a new boat; cost about \$1,500. Will sell for \$600. Boat at Gravesend Bay. Advertiser, 121 Produce Exchange, New York City. Telephone 103 Broad.



3937



965

No. 965—For Sale—100x17-ft. power yacht. Launched Fall, 1909. Unusually heavy construction; splendid sea-boat. Speed 12-14 miles; 150-h.p., 6-cylinder Craig motor. Large accommodations include three double staterooms, 14-ft. saloon, bath, two toilets, etc. Everything complete. Available at bargain figure. Apply to Cox & Stevens, 15 William Street, New York.

No. 994—For Sale—Splendid cruising power yacht, 82.6 ft. o. a., 13.9 ft. beam, 4 ft. draught. Launched last August. Speed 13-15 miles; 100-125-h.p. Standard. Electric lights. Handsomely

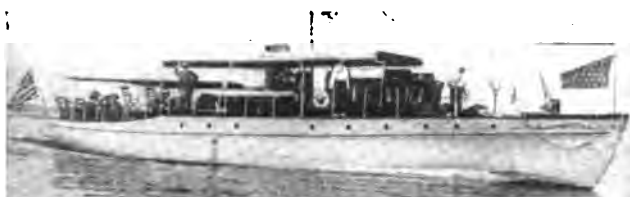


994

finished and furnished. Must be seen to be appreciated. Price attractive. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 600—For Sale—Attractive twin-screw power yacht, 75x15x3.6 ft. Built 1909; best construction. Speed 12-13 miles; two 6-cylinder, 40-50-h.p. Standard motors. Two double staterooms,



600

large saloon, bath, etc. Electric lights. Completely found. Price very low. Apply to Cox & Stevens, 15 William Street, N. Y. City.

* * *

No. 903—For Sale—Lawley keel auxiliary schooner, 72 ft. o. a., 46 ft. w. l., 15 ft. beam, 10 ft. draught. Flush deck and cockpit. 20-h.p. motor giving speed of 7 miles. Double and single stateroom; 10-ft. saloon, etc. Interior of paneled mahogany. An exceptional bargain. Apply to Cox & Stevens, 15 William Street, New York City.



903

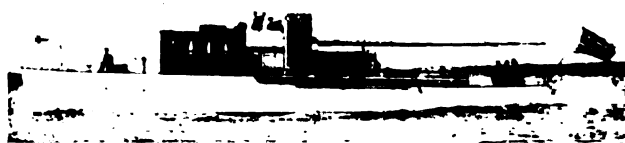


323

No. 323—For Sale—High-speed, twin-screw steel gasoline yacht, 90 ft. o. a., 10.3 ft. beam, 3 ft. draught. Speed up to 25 miles; two 300-h.p. Standard motors. Acetylene lights. Accommodations include saloon, stateroom, galley, etc. Available at less than one-third of cost. Full particulars and plans from Cox & Stevens, 15 William Street, New York City.

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No. 464—Bargain—Lawley-built power yacht, 83x13x4 ft. Built 1907. Speed 13-15 miles; 100-h.p. Standard. Two

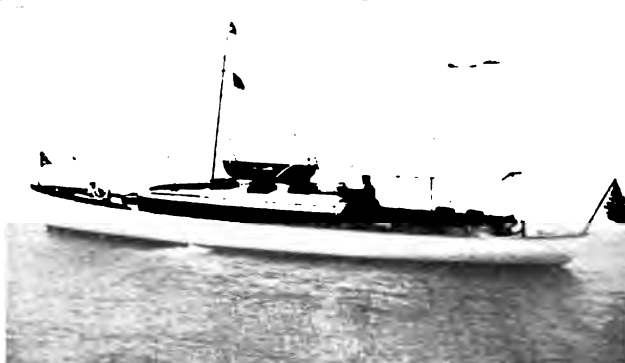


464

double staterooms, main and dining saloons, two toilets, etc. In first-class condition. Full particulars from Cox & Stevens, 15 William Street, New York City.

* * *

No. 388—Bargain—Twin-screw power boat, 62x12x4 ft. Exceptionally seaworthy; suitable for cruising or day service. Speed 13-15 miles; two 30-h.p. Craig motors. Acetylene lights.



388

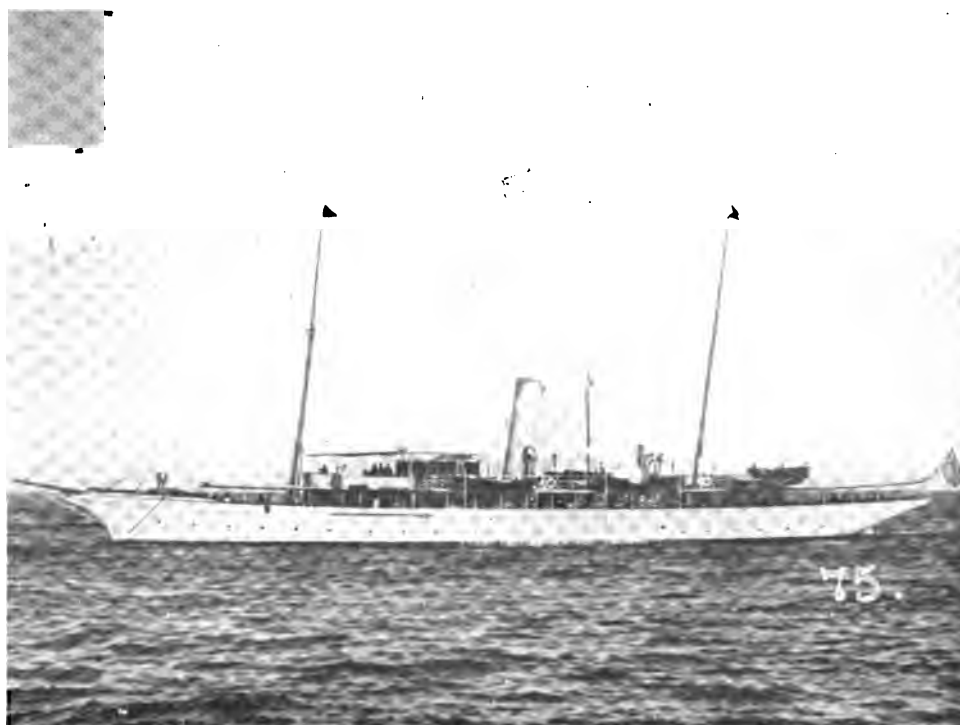
Large fuel tanks. Built by well-known firm; best construction. First-class condition. Available at less than half cost. Apply to Cox & Stevens, 15 William Street, New York City.

* * *

No. 241—For Sale—Keel and centerboard auxiliary yawl, 60 ft. o. a., 40 ft. w. l., 15.6 ft. beam, 5.6 ft. draught. Built 1903. Double stateroom, large saloon, bath, etc. Speed under power 8 miles; 25-h.p. Standard motor. Very able craft; in excellent condition. Available at bargain figure. Apply to Cox & Stevens, 15 William Street, New York City.



241



75

No. 75—For Sale or Charter—Modern American-built, ocean-going, steel steam yacht. Superior sea-boat. Has made numerous foreign cruises. 200x174x24.6x12 ft. draught. Speed 12½ knots. Upper deckhouse contains chart room and captain's stateroom. Main deckhouse 88 ft. long, with dining saloon in forward end, finished in mahogany; next aft being large pantry and galley. After deckhouse contains smoking room. Upper deck about 110 ft. in length. Crew below forward. Next aft are two large guests' staterooms, followed by main saloon about 10x20 ft., aft of this being bathroom, storeroom, and companionway to main deck. Aft of the machinery space are two unusually large owner's staterooms with bathroom connecting; also maid's room, two double guests' staterooms and bathroom. Interior handsomely finished in mahogany and white. Extra good headroom. Engines, boilers, hull, etc., are all in excellent condition, as the yacht has been well kept up. Very large coal capacity, 165 tons. Fresh-water evaporator, ice-machine, electric lights, hot and cold water, etc. Complete equipment of boats, awnings, etc., as well as outfit below. Further particulars, plans, prices and inspection permit from Gielow & Orr, 52 Broadway, New York City.

No. 634—For Sale—Beautiful gasoline launch, 60 ft. o. a., 56 ft. w. l., 10 ft. 9 in. beam, 3 ft. draught. Engine has been removed. This boat was built by the day out of selected stock, best white oak frame, planking of Oregon pine, long length. Mahogany finish throughout. The cabin is 13 ft. long and has 6 ft 9 in. headroom. There are six transoms and one w. c. She made her trial trip from Boston to Cape Cod and return, giving perfect satisfaction. Hull suitable for business or pleasure. The price is extremely reasonable, which, with any further particulars, may be obtained from the Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1158—For Sale—Twin-screw houseboat, steam power, ram bow of the man-o'-war type; one of the handsomest and most luxuriously equipped houseboats afloat. Length 116 ft., beam 21 ft., draught 4 ft. 6 in.; built in 1907; two triple-expansion engines; speed 10 miles; large coal and water capacity, giving cruising radius of 1,200 miles. Electric lights, steam heat, telephone, two power tenders, etc. Accommodation consists of one double and four single staterooms, music room, four bathrooms, and large dining saloon. Available for purchase or charter. Apply William Gardner, 1 Broadway, New York City.



634



1158



4128

No. 4128—For Sale—Very handsome and attractive motor boat designed by Arthur P. Homer and built by Loring at Braintree; launched August 15, 1910. 35 ft. o. a., 7 ft. 6 in. beam, 3 ft. draught; very best construction; planked with hard pine; Plymouth white oak frame; galvanized fastening; all outside finish mahogany; interior of cabins white and mahogany; sleeping accommodations for four people in forward stateroom and after main saloon; water-tight cockpit 7 ft. in length; regular equipment, toilet room with Sands' plumbing, lavatory, etc.; equipped with a 30-45-h.p. 1911 type Sterling motor, giving her a speed of $13\frac{1}{2}$ miles per hour; cockpit is covered with awning; cabins are fitted with velour cushions and Wilton carpets. Inventory is complete in every respect; includes curtains, electric lights, riding and side lights, stove, anchors, and cables, everything complete, ready to go to sea. Boat was used

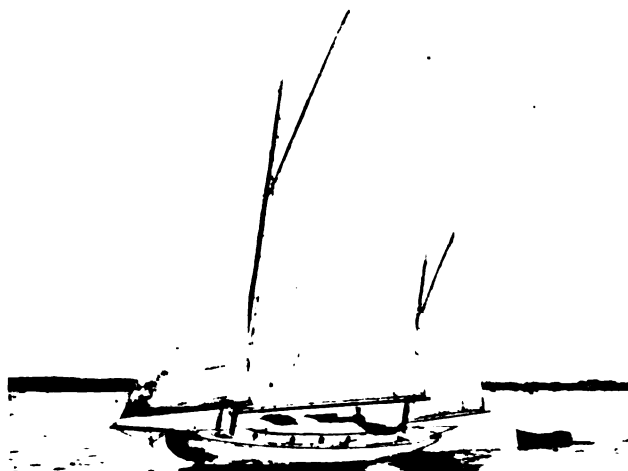
less than two months and is a remarkable trade at the price at which she is offered. As will be seen from the photograph she is a very stylish and up-to-date launch and is well worth the attention of any one desirous of purchasing a boat of this type. Price is very reasonable. Boat is laid up near Boston and can be easily seen. Apply to Arthur P. Homer, 88 Broad Street, Boston, Mass.

* * *

No. 3880—For Sale—Auxiliary yawl, 39 ft. 6 in. o. a., 25 ft. w. l., 9 ft. 6 in. beam and 5 ft. 6 in. draught. Built in 1902 in the very best manner, by L. J. Nilson of Baltimore, from designs of I. B. Mills. Her sails, standing and running rigging were new in 1909. She has two cabins, a galley and a toilet. Equipped with a Fay & Bowen 6-h.p. engine, giving her a speed of $4\frac{1}{2}$ miles under power alone. Has proved to be an able and comfortable cruiser on many long trips. Price very reasonable as owner is moving West. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 4061—For Sale—(Owner desires larger boat.) 28x5 ft. No. 16 gauge galvanized steel runabout, tunnel stern; "Hyde system." Equipment: 4-cylinder, 4-cycle, Auto engine under deck with hinged hatches. Rear starting device. Baldrige reverse gear. A classy family boat. A bargain for any one wanting such a boat. Is in northern Michigan waters. The Hyde Metal Boat Co., Watertown, N. Y.



3880



4061



692

No. 692—For Sale—High-class keel cruising yawl, 42 ft. o. a., 26 ft. l. w. l., 10 ft. beam, 6 ft. 3 in. draught, designed by Crown-inshield, built by Stearns & McKay in 1903; was built of selected material and is probably the most elaborate finished yawl of this size afloat costing over \$5,000 to build; 7,000 lb outside lead ballast, 6 ft. headroom; finished throughout solid paneled mahogany; is in perfect condition; completely equipped for extended cruising; two extension transoms; coat lockers aft; sideboards, drawers under; large toilet room with folding lavatory; also large galley and forecabin with three-burner stoves, ice-box; dish lockers, etc., and berth forward; sails as good as new; about 900 sq. ft. with full set of light sails and sail covers. Was formerly an auxiliary, engine having been taken out, but boat is bored and engine bed is in place under cockpit which is about 8 ft. long; steers with wheel; Edson steerer; has long keel. Equipment includes cedar tender, binnacle, compass, lights, lamps, upholstery, dishes, mahogany table, hair cushions, etc. Is a fast sailer and has cruised extensively. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 2248—For Sale—Smart handling, auxiliary cruising yawl; centerboard below cabin floor, 47.6x32x12.6x5 ft. draught. Built

1906. Double stateroom, also double berth port side amidships, two berths and two transoms in cabin; toilet room, galley and forecabin. Headroom 5 ft. 10 in. Engine 4-cylinder, 4-cycle, 12-h.p., speed 6.5 miles. Large inventory includes Ratsey sails, new, 1910, anchors, chain, cable, moorings with chain and buoy, round bottom, cedar dinghy, crew's skiff, lights, awnings; complete cabin, cooking and serving outfits for party of six. Extra good sea-boat, dry, able, comfortable. Thoroughly good order. Further particulars from Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 1035—For Sale—Greatest bargain on market. Flush deck auxiliary steel schooner yacht. Owner has large steam yacht and will sacrifice the schooner. 110x78x21.6x11.9 ft. draught. Centerboard under cabin floor. Handsome interior finish, mahogany and tinted enamels. Two double, one single stateroom, bathroom and three toilets aft. Main saloon 13.9 ft. long. Running hot and cold water. Engine 75-h.p. Standard, speed 8 to 9 knots. Independent electric light engine, 10-h.p.; searchlight, electric fans. Complete outfit of sails, boats, lights, awnings, etc. A fine, able and attractive yacht. Plans, price, etc., Gielow & Orr, 52 Broadway, New York City.



2248



1035



5384

No. 5384—For Sale—Modern gasoline cruiser, built by Seabury Co. in 1907. Dimensions: length 40 ft., beam 10 ft., draught 3 ft. Accommodations include double stateroom, saloon and galley. Sleeps six persons. Headroom 6 ft. 2 in. The motor is a 20th Century, 4-cylinder, 24-30-h.p. Boat is in excellent condition. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

No. 1804—For Sale or Charter—Bargain; most desirable and fastest houseboat of its size. Our design, built 1906. Strongly



1804

constructed, very seaworthy, excellent condition. 84.6x76x23.6 x4.6 ft. draught. Speed 10½ to 11½ knots. Two 70-h.p. en-



2226

gines. Social hall on upper deck 12x17 ft. Main deck forward has three double staterooms and two bathrooms; next aft dining saloon 12x20 ft. Aft again, engine room, galley, messroom, crew's quarters. Large water and gasoline capacity. Hot water heating system; acetylene lights. Launch, gig, dinghy, complete equipment. Plans, price, Gielow & Orr, 52 Broadway, New York City.

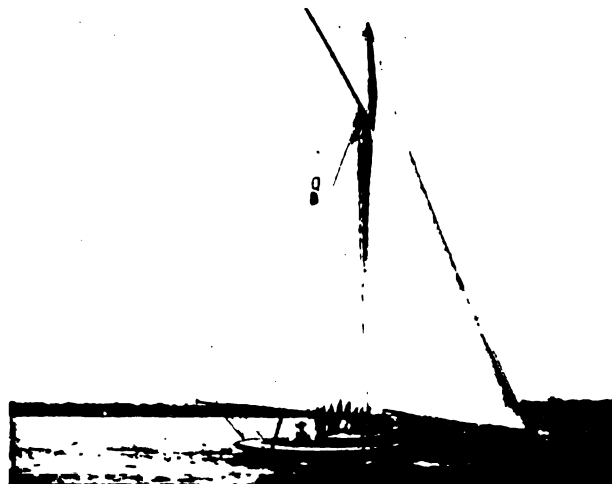
No. 1045—Sacrifice—Able keel auxiliary schooner, 69 ft. o. a., 54 ft. w. l., 17.4 ft. beam, 9 ft. draught. Flush deck. Interior of mahogany. Two double staterooms, large saloon, two toilets, etc. Speed under power 7 miles; 25-h.p., 4-cycle motor installed 1907. Acetylene lights. Sails in good condition. Completely found, including launch (new, 1909). In first-class condition. Very comfortable. Owner has larger yacht. Apply to Cox & Stevens, 15 William Street, New York City.

No. 2226—For Sale—Well-known raceabout, 34.5x20.6x8.8x4 ft. Keel and centerboard sloop. Designed by Tams, Lemoine & Crane. Built by Wood, 1907. Absolutely perfectly kept up. Has been used little. Complete equipment of sails. Everything in excellent condition. 3,000 lb of lead. Good-sized cockpit. Trunk cabin. Only raced in 1907, winning 6 firsts out of 12 starts. Excellent day boat. Can be purchased reasonably. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

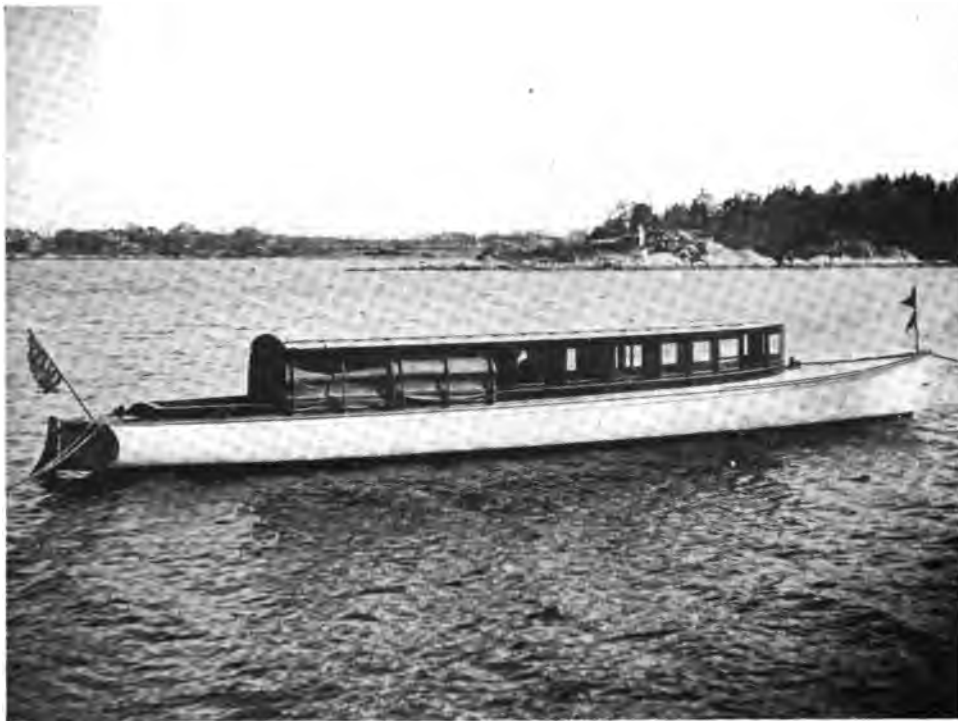
No. 2925—For Sale—25-ft. class sloop. Dimensions 35 ft. on deck, 23½ ft. w. l., 8 ft. beam and 5½ ft. draught. Built 1905. Double planked mahogany and cedar. 4,000 lb outside lead. Two suits of sails; one Ratsey. Is fast and at the same time a good cruiser. One of the few boats of the class having cabinhouse. Price low. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.



1045



2925



4423

No. 4423—For Sale—Fast gasoline day boat. Dimen.: Length 50 ft., beam 7 ft., draught 3 ft. Built 1908. Condition good as new. Has glass cabin forward and open and covered cockpit aft. 60-h.p. Holmes motor placed amidships. Speed $18\frac{1}{2}$ -20 miles per hour. Finished throughout in mahogany. Hull is of excellent design and workmanship. Owner is building larger boat. Probably the best thing of the type available at a reasonable price. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 2842—For Sale at attractive figure. Desirable auxiliary cruising yawl, excellent boat for Southern waters, 37x30x12x 3 ft. draught. Large saloon and double stateroom with electric lights, accommodates six. Sails and all rigging new 1909.

Equipped with a 10-h.p. motor, giving speed of 7 miles. 5 ft. freeboard at bow, 2 ft. 4 in. least. Good cruising outfit, including anchor, lights, awnings, launch and dinghy. For further particulars apply Gielow & Orr, 52 Broadway, New York City.

* * *

No. 1352—For Sale—Jib and mainsail sloop yacht, 38x26x12x 4.3 ft. draught, built in best manner with 3,000 lb lead outside. Boat is in best of condition. Two suits of sails, also balloon jib, jibtopsail, spinnaker, and storm jib. Large cabin with 6 ft. headroom, will sleep four. Planking runs whole length of boat without butts. Equipment is very complete, including linen, china, cooking utensils, ice-box, Negus compass, etc. Full particulars apply Gielow & Orr, 52 Broadway, New York City.



2842



1352

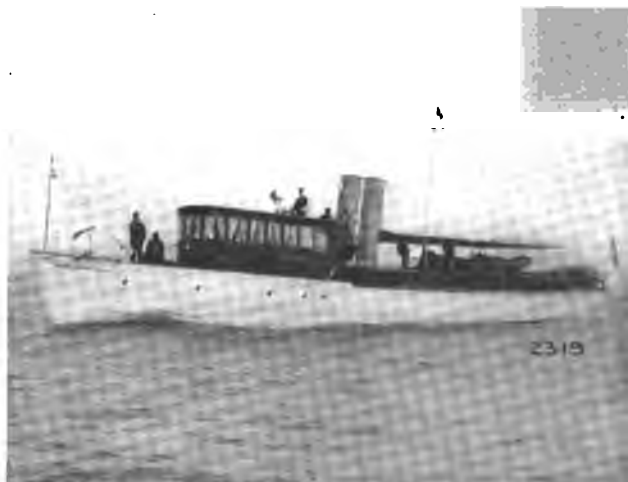


635

No. 635—For Sale—Cruising sloop, 55 ft. o. a., 35 ft. w. l., 12 ft. 6 in. beam, 8 ft. draught. Tonnage 16 gross, 13 net. Designed by Fred D. Lawley and built by George Lawley & Son Corp., South Boston, Mass., 1901. Built in very best manner. 14,000 lb lead on keel. Cabin has 6 ft. 2 in. headroom and is handsomely finished in mahogany, and with new hangings. Comfortable stateroom with spring mattress, set basin, etc. Two berths with spring mattresses, and two transoms, making main cabin comfortable for four people. Roomy forecabin for three men. Two toilets, one aft and one forward. This boat is in perfect condition and fully equipped for cruising, with china, linen, bedding, two anchors, lights, binnacle and compass; cooking utensils, carpets, coal-stove, etc. Full suit of sails. Has 11-ft. bright cedar tender. Stiff, very fast, and an ideal cruiser. Only reason for selling is that owner is going abroad. This is a strictly high-grade boat in every particular, for sale at a moderate price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. Tel. Main 23.

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No. 2319—For Sale; price attractive—Twin-screw express



2319

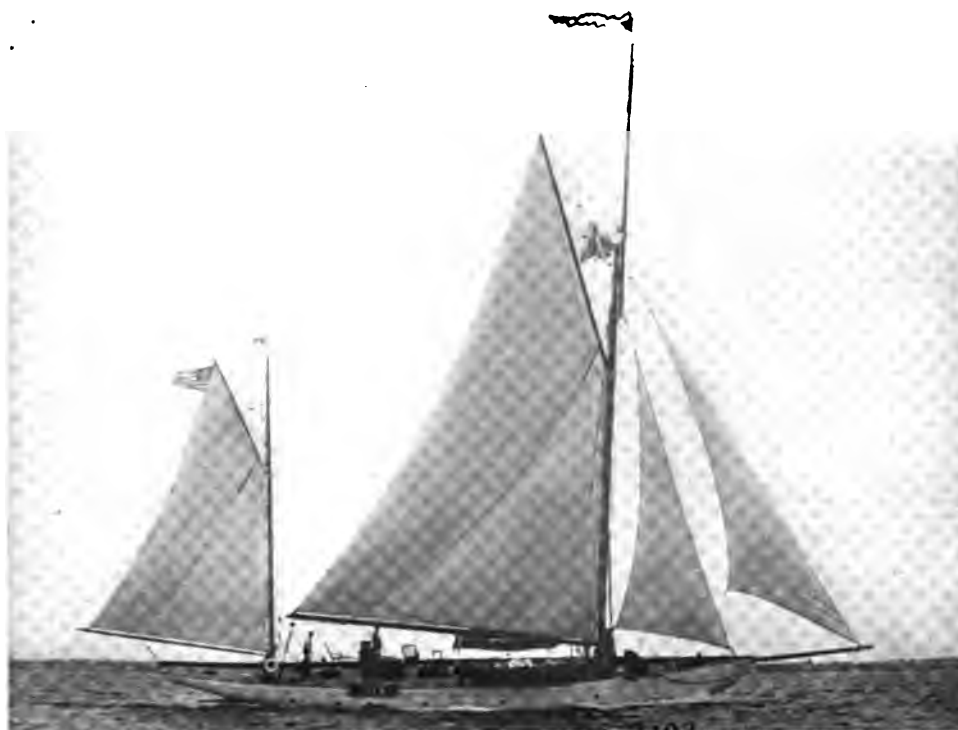
steam yacht. Speed up to 20 miles. 110.6x104x14x4 ft. draught. Crew and galley below forward. Deckhouse contains dining saloon and toilet room. Aft are two staterooms with double berths, single stateroom, bathroom, and main cabin with transoms, etc. Interior handsomely finished in mahogany and other hard woods. Good-sized navigating and observation bridge aft of deckhouse; also large after deck 18 ft. long. Fully equipped. Owner cannot use, and wants offer. Plans, additional particulars and price from Gielow & Orr, 52 Broadway, N. Y. City.

* * *

No. 12—For Sale—Herreshoff flush deck steam yacht, 127 ft. o. a., 14 ft. beam, 6 ft. draught. Dining room on deck forward, three double staterooms, bathroom, two owner's toilets. Can sleep from eight to twelve. Headroom 6 ft. 3 in. Interior finish, white and mahogany. Triple-expansion engine, water-tube boiler, electric lights, moderate coal consumption, economical to operate. Launch, gig and dinghy, and extensive equipment. Has always been well taken care of. Owner has no use for this yacht and is anxious to sell. Gielow & Orr, 52 Broadway, New York City.



12



2103

No. 2103—For Sale—Excellent bargain; flush deck, keel and centerboard, auxiliary yawl. 77x52x17x7.6 ft. draught; centerboard under cabin floor. Oak frames, yellow pine planking, copper fastened. White pine deck. About 28,000 lb lead ballast on keel. From galley aft, entire interior finish solid mahogany. Headroom 6.2 ft. Aft is stateroom with two large double berths. Next forward to port is bathroom. Short passage leads from stateroom to main cabin, containing transoms, book-case, writing desk, sideboards, lockers, etc. From saloon passage leads forward to galley. To starboard, owner's stateroom with double berth, bureau, large wardrobe, etc. To port, guest's stateroom with single berth, etc. Galley contains engine, 32-40-h.p., new, 1910. Speed 7 miles. To port, captain's stateroom and forward, crew's forecabin. Very complete inventory including full suit working and light sails, new 1909; anchors, cables, awnings, sailing dinghy, crew's and owner's launches, latter new, 1910, built to order from special plans; complete cabin equipment except china. Upholstery, curtains, carpets, etc., new, 1910. Unusually able, handsome and desirable yacht, remarkably kept up. No more finely or completely equipped yacht of her size is known

and she has the accommodations of one 20 ft. longer. Further particulars, plans, inventory, etc., from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3908—For Sale—Massachusetts Bay 18-ft. knockabout. Crowninshield design. Built by Graves. 31x18x5.3. 1,850 lb lead outside. Water-tight cockpit and small cuddy forward. A very fast and handsome boat. She is in excellent condition and is easily handled. For further particulars apply to H. A. Swart, 226 South Second Avenue, Mt. Vernon, N. Y.

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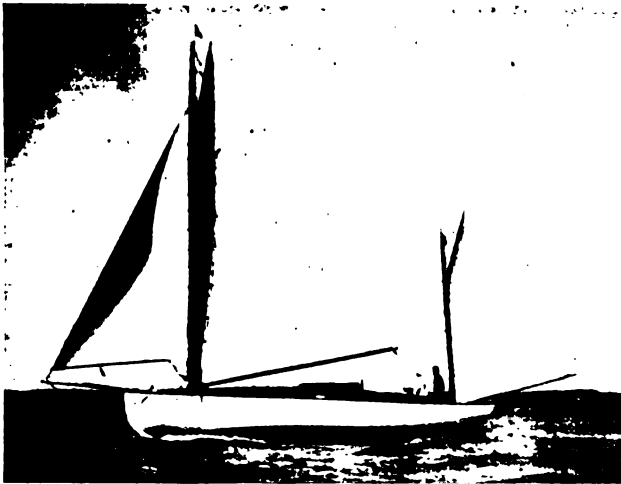
No. 1677—For Sale—Great Bargain—Fast racing sloop; also adapted for cruising. 42x30x9x6.5 ft. draught; Gielow design; highest grade of construction; copper fastened throughout; double-planked with cedar and mahogany; about four tons of lead keel; two transoms, toilet room. Sails in good condition; hollow spars. Mahogany cabin and cockpit. Fine sea-boat. One of the fastest Class P sloops. Won championship handicap Class 1909-1910, long distance championship 1910. For plans and further particulars apply Gielow & Orr, 52 Broadway, New York City.



3908



1677



3913

No. 3913—For Sale—Fast, able yawl Comfort, 34x26x12x3.6. 5 ft. 10 in. headroom. Bored for engine. Main cabin has four berths with cushions, etc.; lockers whole length each side. Toilet room with Bishop's closet; foc'sle with pipe berth; galley with ice-box and new Shipmate range. Cockpit water-tight; winch forward. Full cruising inventory. A 12-ft. bright cedar dinghy with mahogany seats, bronze gun, awning, spirit compass, brass lights and lamps, Winter covering, sail covers, anchors, warps, side steps, and a No. 7 bulb shank mooring go with her. Open to rigid inspection at Nock's, East Greenwich, R. I. Reason for selling is owner wants \$900. Address P. O. Box 263, Arctic, R. I.

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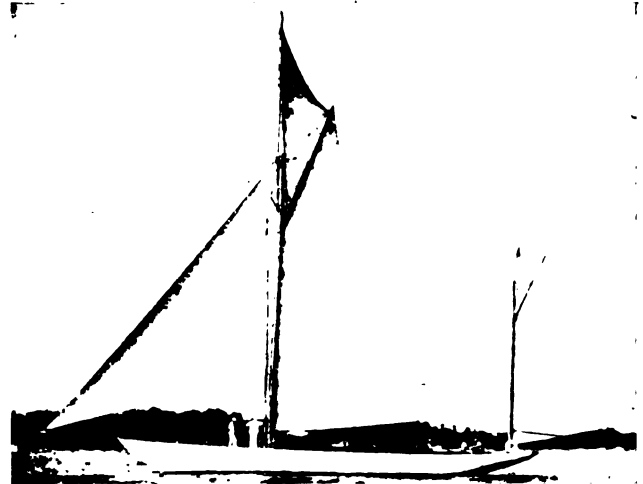
No. 5474—For Sale—Raised deck auxiliary knockabout. Dimensions: 20 ft. o. a., 18 ft. w. l., 8 ft. beam and 2 ft. draught. Built 1909. 4½ ft. headroom in cabin. Has Palmer motor. One of the few boats of this new type. Is recommended for purchase. Further particulars from Frank Bowne Jones, 29 Broadway, New York.

* * *

No. 3352—For Sale—Famous yawl. Designed and built by Herreshoff Manufacturing Co. Dimensions: 70 ft. on deck, 50 ft. w. l., 15 ft. 3 in. beam, 7 ft. draught without board. Outside lead about 18 tons. Has probably the best accommodations of any yacht of her size, including two large staterooms: two berths in saloon and transom berth in chart room. The yacht's condition is good as new. A splendid cruiser as well as probably being the fastest yacht of her size. Winner of many cruising prizes. Has two suits of sails and a very complete equipment. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 5161—For Sale—Canopy-top launch. Dimensions: length 32½ ft., beam 6½ ft., draught 2½ ft. Built in 1906. Of ex-



3352

cellent construction throughout. Adapted for a family boat. Motor is a 3-cylinder, 12-h.p., only used one year. Speed is 9



5161

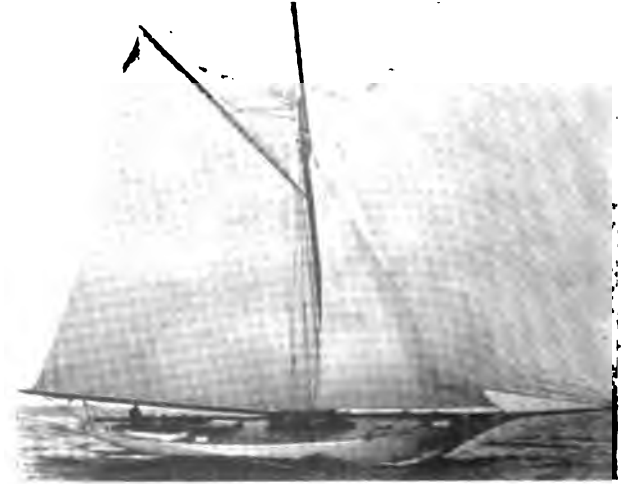
miles per hour. Price reasonable. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 3910—For Sale—Attractive cruising sloop, 50 ft. o. a., 33 ft. w. l., 13 ft. 2 in. beam, 8 ft. 2 in. draught. 8 tons of lead on keel. Cabin finished in mahogany with 6 ft. 3 in. headroom.



5474



3910



3872

Designed and built by Lawley at South Boston in the very best manner. Two berths and three transoms in cabin, large state-room. Two w. c's., large ice-chest, two berths forward, spacious clothes lockers, china and glass locker, etc. Roomy cockpit. Flush deck. Complete cruising outfit. A very seaworthy and able cruiser. Reasonable price. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. *

No. 3872—For Sale—Auxiliary yawl, classiest cruiser of her size on Detroit River. 33x9.5x4.5 ft., built 1908 by Pouliot Boat Co. She has 1,400 lb of iron on keel and is exceptionally strong and seaworthy. Cockpit accommodates eight persons and is self-bailing. Engine is 10-h.p., 4-cycle, speed under power, 7 miles. Cabin has Sands' w. c., two-burner stove, dishes, compass, lamps, cushions, life-preservers and full cruising outfit. Price \$1,250. Full particulars and reason for selling at 206 West Huron Street, Ann Arbor, Mich. *

No. 31—For Sale—Twin-screw motor yacht, 96x16.6x4.2 ft. Adapted for passenger service. Speed 12 miles; two 50-h.p. Murray & Tregurtha motors. Cabins finished in mahogany. Electric lights. Very able craft and in first-class condition. Owners anxious to sell and can be had at bargain figure. Offer for charter considered. Apply to Cox & Stevens, 15 William Street, New York City. *

No. 5452—For Sale—Cape Cod catboat. Dimensions: 27 ft. on deck, 20 ft. w. l., 11 ft. beam, and 2½ ft. draught. Built by Daniel Crosby & Co., Osterville, in 1905. Has 2,500 lb of inside lead ballast. Cabin sleeps four persons. Good headroom. Is bored for motor so could be easily converted to auxiliary if desired. Is in excellent condition and price is attractive. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City. *



31



5452

No. 668—For Sale—Desirable gasoline launch; well decked over forward and aft and an exceptional sea-boat; 32 ft. 6 in. o. a., 28 ft. w. l., 7 ft. 6 in. beam, 2 ft. 8 in. draught. Designed and built by Graves at Marblehead, Mass. Equipped with a 12-h.p. Mianus engine, which drives her along at a good rate of



668

speed. Gasolene capacity 50 gal., tank forward. A very serviceable boat and one which can be depended upon at all times. Very reasonable price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. *

No. 5498—For Sale—Gasolene cruiser. Dimensions 54 ft. on deck, 49 ft. w. l., 10 ft. beam and 4½ ft. draught. Built 1908. Has 25-32-h.p., 4-cylinder Standard motor. Excellent accommodations. Strongly built, seaworthy boat, adapted for inside or outside cruising. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City. *



5498



2973

No. 2973—For Sale—Gasolene cruiser. Auxiliary ketch rig with 1,000 ft. of sail. Dimensions: 66 ft. on deck, 56 ft. w. l., 13½ ft. beam, and 3 ft. 9 in. draught. Accommodations are particularly commodious, having sleeping berths for eight persons, exclusive of crew. Carries two boats on davits. Motor is a 40-h.p., 4-cylinder Globe. Boat is of excellent design and very substantially built, and can be had at a very reasonable price. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 2139—For Sale at small proportion of cost—Steel, cruising and racing schooner yacht, 99x68x20.5x12 ft. draught. Interior finish white and mahogany, silk panels. Headroom, about 6.6 ft. Two double and one single stateroom, two transoms in saloon; also steerage berth; bathroom, four toilets, captain's stateroom, galley and forecabin. Acetylene lights. Ratsey sails 1909. Naphtha launch, gasolene gig and dinghy. Sails and whole outfit in excellent order. Made 8,000-mile cruise through the West Indies a few years ago, for which there is a sea rig of short main-boom, bowsprit, gaffs, etc. Large storage space under floors. Price, etc., from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 4517—For Sale—Cruising schooner, 73.4x46x15x10.6. Mahogany double-planked. Oak frames. Tams, Lemoine & Crane design. Built by Lawley, 1902. Very handsome boat. Beautifully finished in mahogany. Excellent condition. 27,000 lb outside lead, 1,000 lb inside. Flush deck cockpit. 6 ft. 2 in. headroom. One double stateroom. Very large main saloon with two comfortable berths. Two toilet rooms. Economical to run. Has two boats, including a launch. Most complete equipment. Has cruised several times from New York up the Maine coast. Can be chartered. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.



4517

No. 2208—For Sale—18-ft. class knockabout. Designed by Crowninshield. Dimensions 30 ft. 8 in. on deck, 17 ft. 11 in. w. l., 7 ft. beam and 5 ft. 3 in. draught. Outside lead ballast about 1,900 lb. Three full suits of sails. Has small cabin and good-



2208

size cockpit. Is a prize winner and an excellent boat for day sailing. Price low. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 3473—For Sale—A dandy little Herreshoff knockabout. Just the boat for day sailing or racing as she is easy to handle,



2139



3473



210

fast, and absolutely non-capsizable. 34 ft. o. a., 20 ft. w. l., 7 ft. beam, and 5 ft. draught. Built in the usual Herreshoff manner with cedar planking, brass screw fastenings, etc. 2,000 lb of lead on keel; sails made by Herreshoff. Boat and outfit in perfect condition. Can be seen near Boston. Very reasonable price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 210—For Sale—Steam auxiliary schooner yacht, 160 ft. o. a., 120 ft. w. l., 28 ft. beam, 16 ft. draught. Cary Smith design. Built of steel by Harlan & Hollingsworth in 1903. 180,000 lb of lead. 3,000 gal. of water. Two suits of sails. Carries a 16-ft. launch, 26-ft. lifeboat, 19-ft. and 16-ft. tenders. Five staterooms and maid's room, three bathrooms and large saloon. Compound engine, 11-in., 24-in. stroke 14-in. built by Sullivan, 1904. Most complete electric light plant. Two boilers. Can make 10 knots. Is very fast and able under sail. Has crossed the ocean. She is in excellent condition. Has most complete equipment. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

No. 3870—For Sale—30-ft. cabin launch, 8 ft. beam, draught 30 in.; oak timbers, cedar planking, copper fastenings, oak trimmed finished bright; brass rail aft, chocks, cleat, flag-poles and flags. Cabin finished in mahogany; extension lockers, pantasote cushions filled with cork and hair; brass steering wheel, bell pulls and bells; spirit compass, large and small anchor with warp, sailing lights, etc. Equipped with 12-h.p., 2-cylinder Lathrop gasoline engine; good sea-boat; speed 8 to 9 miles. Had excellent care; A-1 condition; seen at Stonington, Conn. For price and further particulars call or address E. N. Pendleton, P. O. Box 597, Stonington, Conn.

* * *

No. 10140—For Sale—Gardner 35-ft. keel sloop, 54 ft. o. a., 12 ft. beam, 8 ft. draught. Composite construction. 8 tons lead on keel. Two staterooms; saloon with two transom berths. Mahogany interior. Headroom 6 ft. 3 in. Completely equipped—two suits sails, hollow spars. Boat thoroughly overhauled several years ago—hardly used since—in first-class condition throughout. Excellent prize record; consistent cruiser. Eligible in either M or N Class under new rules. Must sell—want offer. Accept smaller boat part payment. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.



3870



10140



3681

No. 3681—For Sale—New raised deck cruiser. Dimensions: length 36 ft., beam 9 ft. 6 in., draught 3 ft. Built last season. Full headroom in cabin with accommodations for four persons. Engine is 16-h.p., 2-cylinder, 2-cycle. A husky seaworthy boat, strongly built and from the plans of a good designer. Price reasonable. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

No. 2910—For Sale—Modern gasoline cruiser. Dimensions: 93 ft. on deck, 75 ft. w. l., 15 ft. 6 in. beam, 4 ft. 6 in. draught.



2910

Of the best design and build. Accommodations include three staterooms and saloon. There is a very commodious bridge



3479

deck. Motors are two 60-h.p. Craig, giving the yacht a speed of 13 to 14 miles an hour. Is electric lighted and has a search-light. Offered at a very reasonable price for such a high-class yacht. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

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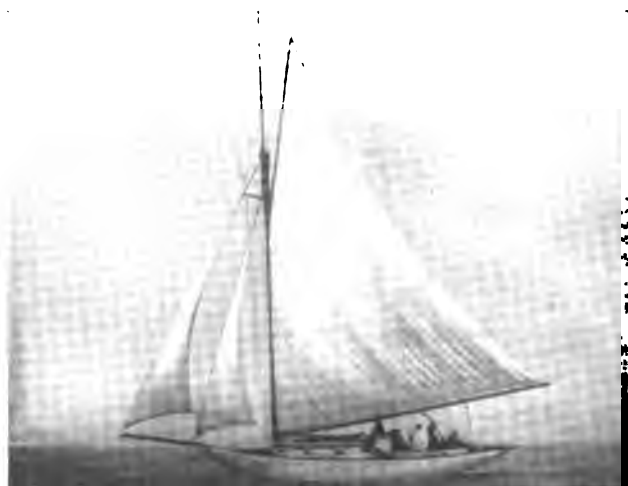
No. 1610—For Sale or Exchange—for 35-ft. cruising launch. Fast and seaworthy centerboard sloop 42x14x4 ft. draught. Large cockpit, over 6 ft. headroom in cabin which is fitted with two berths and two 12-ft. transoms, toilet, galley, etc., new ice-box. Mainsail and running rigging new 1910; other sails and standing rigging in good condition. Yacht has been splendidly kept up. Inspectable near New York. Price attractive. For further particulars apply to Gielow & Orr, 52 Broadway, New York City.

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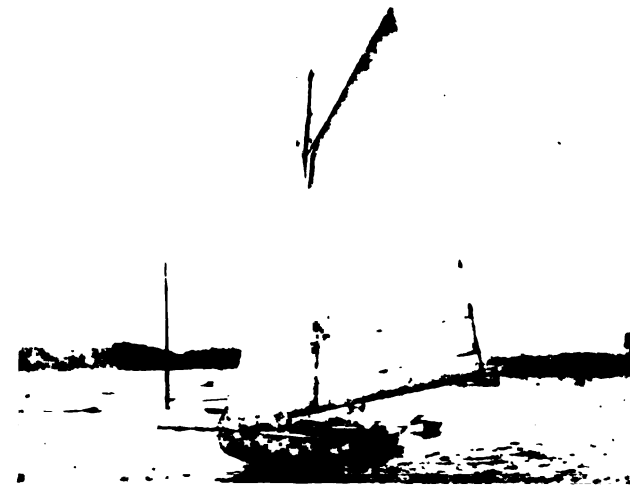
No. 3479—For Sale—Motor boat, 25 ft. long, 5 ft. 10 in. beam, compromise stern, 3/4-in. cedar planks; four years old, speed between 7 1/2 and 8 miles per hour. 10-h.p., 2-cycle Brown-Talbot motor, 2 cylinders; Orswell ignition; complete equipment, anchors, ropes, life-preservers, lights, etc. Brown canvas melon spray-hood covers entire standing room; 14-ft. flat bottom tender and two moorings. Price \$400. Owner moved to the country and has no further use for her. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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No. 556—For Sale—Keel knockabout, 29 ft. o. a., 20 ft. l. w. l., 7 ft. 6 in. beam, 5 ft. draught, 3,000 lb outside lead ballast; water-tight cockpit; cabin with transoms, lockers in rear; closet; stove space; stoves, anchors, cables, etc. Does not leak a drop and is recommended as a safe, comfortable boat for day sailing and cruising. Has cruised to Nova Scotia and return. Cross cut sails in good condition. Laid up at Marblehead. Apply only to John G. Alden, 27 Kilby Street, Boston, Mass.



1610



556

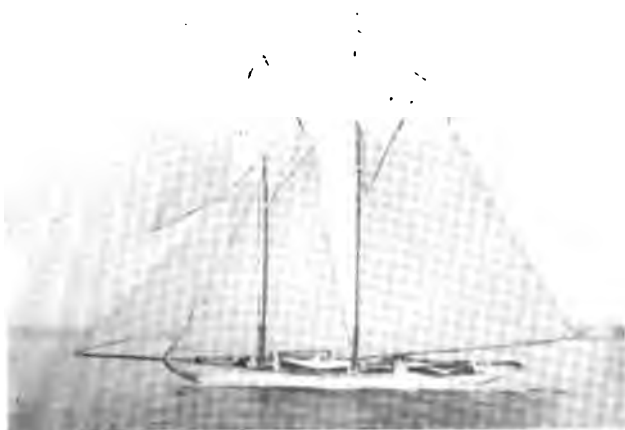


2646

No. 2646—For Sale—Racing and cruising sloop. Designed and built by Herreshoff Manufacturing Co. Double planked mahogany construction. Dimensions: 58 ft. on deck, 37 ft. w. l., 11 ft. 2 in. beam, 8 ft. 10 in. draught. A well-known yacht. Winner of many prizes. Has over two full suits of sails; one new last season. Yacht has been well kept up and condition is as good as new. Has comfortable accommodations for four persons cruising, exclusive of crew. Easily handled and is recommended for purchase at a reasonable price. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 4543—For Sale at an unusually attractive figure—Well-known auxiliary schooner, 89x62x18.3x8.5 ft. Oak frames, pine planking, copper fastened. All deck fittings are of mahogany, rail and plank-sheer of teak. Built by Jacob in 1902. Sails in good condition. 25-h.p. Standard motor recently installed. 25 tons of lead outside, 1,000 lb inside. Flush deck. Large cockpit. 6 ft. 7 in. headroom. Two single staterooms which are large.

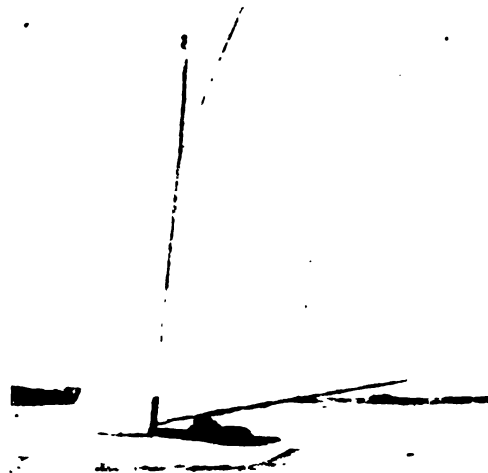


4543

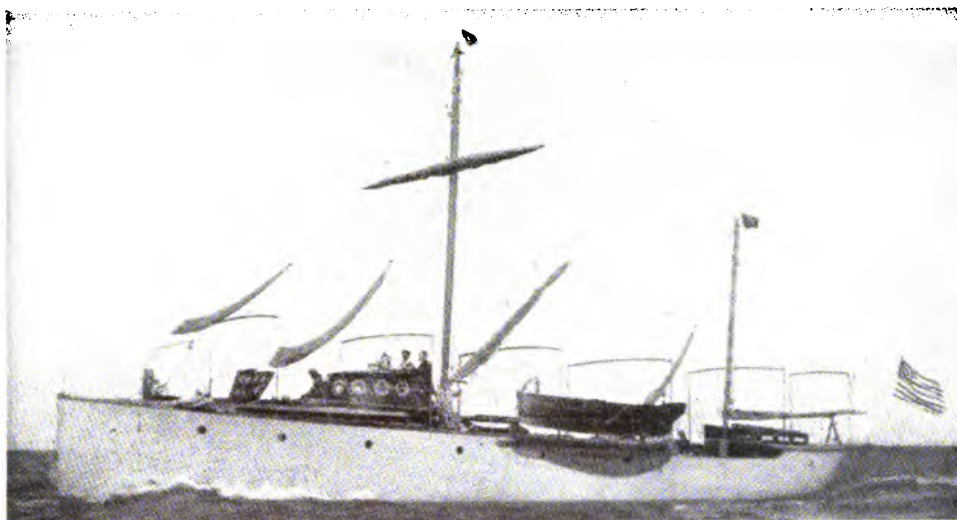
One very large double room. Three toilet rooms. Saloon is large. Two built-in berths and two transom berths. She carries three boats including a launch. Awnings are in good condition as is all the yacht's equipment. Thoroughly overhauled last Spring. Lighted throughout by acetylene gas. Owner will sell for about half cost. Is an unusually able boat. A most comfortable cruiser. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

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No. 3892—For Sale—Keel knockabout, built in 1904 from design of William H. Hand, Jr. Length 25 ft. o. a., 15 ft. w. l., 6 ft. 7 in. beam, 3 ft. 10 in. draught. Ballast of lead, all outside, makes the boat uncapsizable. Copper tanks and bulkheads, also make her unsinkable. A perfectly safe boat, easily handled. An ideal craft for a single-hander or for boys' use. Price very reasonable, and an unusual opportunity to get a perfect little ship at a bargain. Any other particulars desired may be obtained from Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3892



4809

No. 4809—For Sale—Seagoing gasoline cruiser with auxiliary ketch rig. Dimensions: 75 ft. on deck, 69 ft. w. l., 13 ft. beam, and 5 ft. 9 in. draught. Built 1909. Has outside lead ballast. Accommodations include two double staterooms, saloon and after cabin. Headroom 6½ ft. Interior finish in African mahogany and white enamel. Bathroom has Sands' plumbing. Motor power consists of two 150-h.p. Jager motors. Cruising speed 12 knots per hour. Is electric lighted throughout. Yacht is of best design and of the highest class construction. All deckhouses, hatches, etc., are of teak. Probably the best yacht of the type that has been built. Condition as good as new. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 3976—For Sale—25-ft. class sloop. Dimensions: 36 ft. on deck, 25 ft. w. l., 7½ ft. beam and 6 ft. draught. Designed by Crane and built by Wood, 1906. Double-planked mahogany. 5,500 lb outside lead. Very fast boat and excellent day sailer of the best construction. Photo does not do yacht justice. Further particulars from Frank Bowne Jones, 29 Broadway, New York City.

* * *

No. 3873—For Sale—Manatee, the best-arranged houseboat ever designed. Hull 60x12 ft., absolutely sound, and very heavily built of finest selected timber. Hardwood floor throughout the cabinhouse which is overhung,—dimensions 16x42 ft. Accommodations consist of three large staterooms, each containing two single beds, and two small staterooms with double built-in berths. Dining room seating ten persons, and a forward saloon 12x16 ft. Spacious galley, separate pantry, very large refrigerator, also storage tank below deck for 1,000 lb ice and same amount of water. Water tanks piped to pump in galley. Large bathroom containing full-size enameled tub, w. c.

and stationary wash-stand. Separate toilet for crew. Complete with large gasoline range with oven, gas-lighting appara-



3873

tus, dishes, bedding, curtains, furniture, screens, anchor with heavy chain and manila cables, ready for cruising. At Oshkosh, Wis. Address Thomas McNeill, Sheboygan, Wis.

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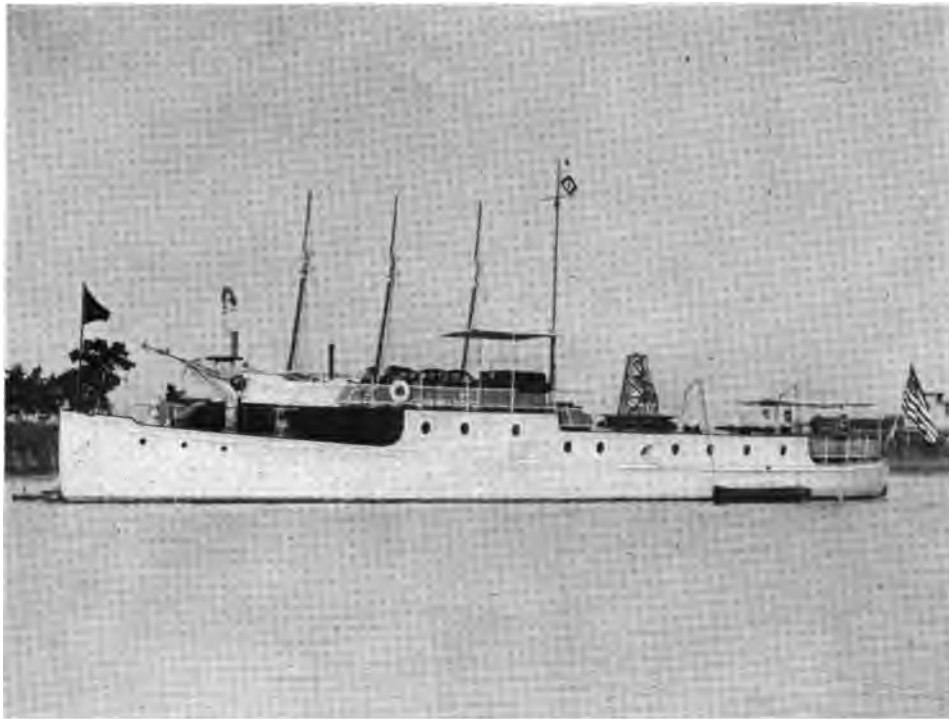
No. 1065—For Sale—Centerboard knockabout. Dimensions: 32 ft. on deck, 21 ft. w. l., 9 ft. beam, and 3 ft. 3 in. draught. Built and designed by Lawley. 3,000 lb of outside lead. Good headroom in cabin. Boat is in excellent condition. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.



3976



1065



7273

No. 7273—For Sale—Modern motor yacht in good condition, 86x82.5x12x4 ft. Oak frames, yellow pine planking, copper fastened. Built 1903. Speed 14 miles. 75-h.p. motor. Complete electric light plant run by separate motor. Large gasoline tanks. Two saloons, each with two transom berths, one forward and one aft. Two staterooms. Bathroom. Large engine room and comfortable crew's quarters. Economical to run. Carries 200 gal. water. 16-ft. launch in addition to dinghy. Most complete equipment. Always had the best of care. In good condition. Owner anxious to sell. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 2273—For Sale—Keel sloop well constructed.



2273

Built 1906. 31x18x7.6x5 ft. Very fast and able. Two full suits of sails. 2,500 lb lead. Cabin with two berths. Dinghy. Most complete equipment including cooking utensils, blankets, dishes, etc. Unusual opportunity. Can be purchased for low figure. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 3893—For Sale—Most desirable cruising yawl, 43 ft. 7 in. o. a., 28 ft. 6 in. w. l., 3 ft. 9 in. draught. Combination keel and centerboard, making her with the comparatively light draught an ideal cruiser. Built in Wiscasset, Me., in 1901, by Pendleton, designed by Small Bros. Very ample cabin accommodations, having four berths in cabin besides transoms, giving sleeping accommodations for six. Cabin finish bright cypress. This yacht has not had more than eight weeks' use in a year. Is in perfect order and ready to go into the water. Painted outside last October. All sails good. No better cruiser of her size on the coast. Price very reasonable. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3893



487

No. 487—For Sale—Flush deck, designed and built by Herreshoff Manufacturing Co.; modern and up-to-date. Suitable for canal passage. Boat and equipment has received best care and attention. Everything in first-class condition. Triple-expansion engine, Herreshoff boiler used five seasons. Length o. a. 99 ft., w. l. 83 ft., beam 14 ft., draught 5 ft. 4 in.; speed 15 miles. Coal consumption one ton per 100 miles. Deckhouse contains dining saloon. Owner's quarters located forward of engine room, consisting of two single and one double stateroom, bathroom, wardrobes, etc. Photograph is that of sister boat. Offered for sale on account owner having built larger craft. For further particulars apply to William Gardner, 1 Broadway, N. Y. City.

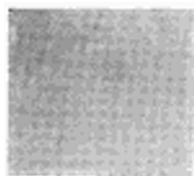
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No. 2273—For Sale—Able and roomy cruising launch, 52x10x3.6 ft. draught. Forecastle forward with toilet, followed by stateroom with Pullman berth on either side; following this is main cabin fitted with Pullman berth on either side, also contains lockers, sideboard, etc., large table in center and sky-

light over. Next aft is the engine room and galley, with companionway to cockpit which is 13 ft. long. Engine 4-cylinder Craig, 25-30-h.p.; consumes three gal. of gasoline per hour at a cruising speed of 11½ knots. Mahogany finished throughout. High freeboard. Low mahogany trunk with 18-in. deck on each side. Plans and further particulars from Gielow & Orr, 52 Broadway, New York City.

* * *

No. 1707—For Sale—At very low figure. Successful Class "P" racing and cruising sloop yacht, 42 ft. 9 in. o. a., 30 ft. w. l., 9 ft. beam, 6 ft. 4 in. draught. Gielow design. Double-planked with cedar and mahogany; copper fastened. Two berths in cabin, toilet, etc. Two suits of sails, one by Ratsey. Excellent sea-boat, and one of the fastest in her class. In 1907 won Championship Atlantic Y. C., Seawanhaka Y. C., Larchmont Y. C., Roosevelt Cup at Jamestown. Mahogany cabin, cockpit and trimmings. Plans and full particulars, Gielow & Orr, 52 Broadway, New York City.



2273



1707



1946

No. 1946—For Sale—60x11x3½. Built 1908 by New York Yacht, Launch & Engine Co. Mahogany finish, bridge control. 70-h.p., 6-cylinder, 20th Century engine. Speed 15 miles. Original cost about \$17,000; price \$6,000. Apply to Cox & Stevens, 15 William Street, New York City.

No. 1794—For Sale—60x11½x3½. Built 1910. Every cruising accommodation. 50-h.p., 6-cylinder, 4-cycle Hall engine.



1794

Price attractive. Apply to Cox & Stevens, 15 William Street, New York City.

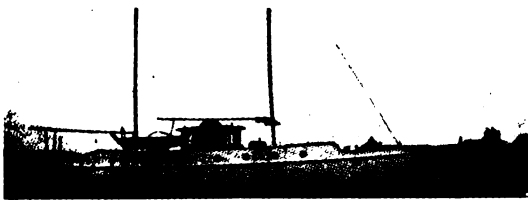
No. 1654—For Sale—43x10x3. Built 1909, latter part. Completely equipped. 18-25-h.p. Standard engine. Speed 10 miles.



1654

Price exceedingly low. Apply to Cox & Stevens, 15 William Street, New York City.

No. 1320—For Sale—66x13½x4½. Built 1904. Every cruising accommodation. Completely furnished. 40-h.p. Globe engine.



1320

Price low. Apply to Cox & Stevens, 15 William Street, New York City.

No. 1622—For Sale—46x10½x3. Built 1907. Every cruising accommodation. Completely equipped. 40-h.p. Lozier engine.



1622



1142

Speed 10 miles. Price attractive. Apply to Cox & Stevens, 15 William Street, New York City.

No. 1142—For Sale—68x14x4½. Built 1910. High-class in every respect. Completely equipped. 60-h.p. Sterling engine. Price attractive. Apply to Cox & Stevens, 15 William Street, New York City.

No. 1232—For Sale—40x9x3. Built latter part of 1908 by New York Yacht, Launch & Engine Co. Exterior and interior of cabin piano finish mahogany. Main cabin 12 ft. 6 in. long;



1232

cockpit 9 ft.; 6 ft. 4 in. headroom in cabin; toilet, lavatory, ice-box; everything completely equipped. 20-h.p. 20th Century engine. Price \$2,800. Apply to Cox & Stevens, 15 William Street, New York City.

No. 168—For Sale or Charter—Able and roomy auxiliary schooner yacht, 79 ft. o. a., 54 ft. w. l., 17 ft. beam, 8.6 ft. draught. Two staterooms, saloon, etc. Speed under power 7 miles. Electric and acetylene lights. First-class condition. For full particulars apply to Cox & Stevens, 15 William Street, New York City.



168



542

No. 542—For Sale—Very able keel cruising sloop, 36 ft. o. a., 27 ft. l. w. l., 11 ft. 6 in. beam, 7 ft. draught. Built 1906 at Waldeboro, Me., on exact lines of the Gloucester fisherman. Is very heavily built, much heavier and stronger than any other yacht of this size and should last a lifetime. 5 tons ballast, 3,500 lb. inside, 6,500 lb. outside; water-tight cockpit; wheel; large main cabin, sleeping six; two large closets, separate toilet room and galley, including ice-box, sink draining outboard, shelves, stove space, etc. Has two 35-gal. water tanks, full suit of sails in good condition, sail covers, cushions, two folding berths, compass, lights, dishes, two anchors, two cables, awning, heavy standing rigging, new running rigging 1910, large windlass, etc. Was built for a yacht and is a fast sailer especially in heavy weather and rough water. Is in first-class condition in every way and is as tight as a boat can be. Must be seen to be appreciated. Inspectable near Boston. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

* * *

No. 1856—For Sale—Houseboat now on St. Lawrence, 80 ft. o. a., 76 ft. w. l., 18 ft. beam, 3 ft. 6 in. draught. In excellent condition. Four large staterooms and saloon. Unusually large

upper deck. Very well ventilated. Nicely furnished. Bathroom and two toilet rooms. Lighted by acetylene gas. Very elaborate and most complete equipment. Running hot and cold water in all the rooms and in bathroom. Screens for all the windows. 7 ft. 6 in. headroom. She has large fresh-water tank capacity and also has a large ice-box. Two launches, including a 32x5-ft. launch capable of a speed of 18 miles; 24-ft. launch having speed of 10 miles, hunting skiff and St. Lawrence skiff. Owner would also be willing to charter. Unusual opportunity for any one desiring a houseboat. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 6500—For Sale—Steam yacht on Lake George, 65 ft. o. a., 57 ft. w. l., 10 ft. 6 in. beam, 3 ft. 6 in. draught. Heavily and well constructed. Built by Seabury, 1903. Triple-expansion engines. Seabury water-tube boiler. Cockpit forward, over which is a standing roof. Aft of this is boiler and engine room. Then comes after cabin with two seats, toilet room, small galley and after deck. Ideal boat for use on a lake. Can be purchased very reasonably. In good condition. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, N. Y. City.



1856



6500



616

No. 616—For Sale—Magnificent ocean cruiser, steel construction, 195 ft. o. a., 25 ft. beam, built 1907. All the appointments and furnishings are of highest class. Steam windlass and steering gear. Dining room, drawing room, large galley and pantry; eight commodious staterooms, four of which have accommodations for two persons, thus giving sleeping accommodation for twelve people. Excellent bath and toilet facilities. Triple-expansion engine. Scotch boiler, electric lights, two launches, etc. Speed 13 knots. This yacht can be highly recommended. Inspection invited. Plan and further details can be obtained from William Gardner, 1 Broadway, New York City. Tel. 3585 Rector.

* * *

No. 577—For Sale—Well-known steam yacht on the Lakes, very reasonably as owner has larger boat. 99.2x83x13.7x5.3 ft. Oak frames, pine planking. Best of construction. Designed and built by Herreshoff. Awnings new last year. Carries 1,000 gal. of water. Two boats. Three double staterooms. Bathroom. Four toilet rooms. Dining saloon on deck. Very comfortable crew's quarters. 6 ft. 2 in. headroom through-

out. Triple-expansion Herreshoff engine. Large ice-box. Herreshoff water-tube boilers. Most complete electric light plant. Maximum speed 16 miles, average 13½. Most complete equipment in every way. Boat can be purchased very reasonably. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 7170—For Sale—Modern cruising motor yacht, 68 ft. o. a., 61 ft. 2 in. w. l., 12 ft. 2 in. beam, 4 ft. 5 in. draught. Built 1900. 50-h.p. motor installed 1902. Speed better than 10 miles an hour. Has cruised from New York to Florida and to the Eastward. Unusually good sea-boat. Accommodations for two in forward saloon, four in main saloon, three berths for crew. Has a bathroom. Good-sized galley and engine room. Carries two boats, including lifeboat. Finished inside and outside in mahogany. Excellent condition. Has a most complete equipment. Very large upper deck. Complete electric light plant. Can be had for an unusually low figure. For full particulars, apply to Tams, Lemoine & Crane, 52 Pine Street, N. Y. City.



577



7170



4067

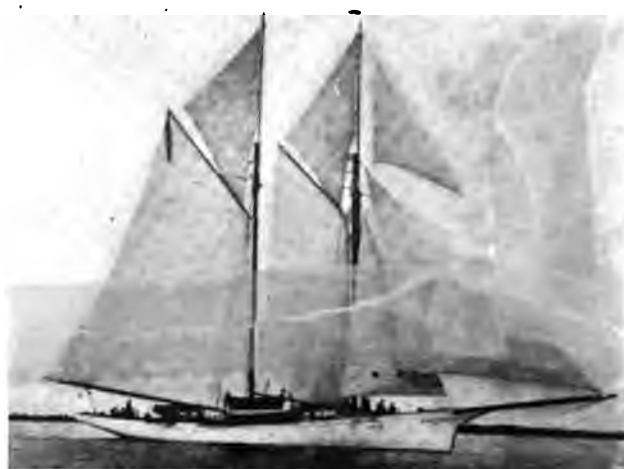
No. 4067—For Sale—Keel yawl, 51 ft. o. a., 33 ft. w. l., 12 ft. 3 in. beam, 7 ft. draught. Very best possible construction. Copper fastened. All deck trimmings of teak. Designed by Cary Smith and built by B. F. Wood, 1904. Room in lazarette for a motor. Has 15,600 lb lead ballast. 6 ft. 3 in. headroom. One stateroom with a double berth. Saloon with two transoms. Nicely finished in white enamel and mahogany. Large toilet room and galley. Also forecabin with two berths, and crew's toilet. Carries a tender. Bronze windlass, brass binnacle and compass. Fully found in every way. One of the handsomest and ablest boats in these waters. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, N. Y. City.

No. 10910—For Sale—Auxiliary schooner, 29.1 ft. o. a., 22½ ft. w. l., 7½ ft. beam, 4 ft. draught. Oak planking. Cabin berths two. Galley space. Palmer motor installed just aft of companionway stairs gives speed of 4 miles. Completely



10910

equipped, including tender. Typical Chesapeake Bay bug-eye rig, embodying extraordinary seagoing qualities and speed with small rig. Price \$400, subject to offer. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.



1016

No. 940—For Sale—Handsome raised deck cruiser, 60x11x4 ft. Launched May, 1910. Speed 11-12 miles; equipped with 30-45-h.p. 20th Century motor of latest type. The excellent interior layout includes crew's toilet and engine room forward, followed by galley entirely separate, then main saloon, single stateroom with bath and toilet room opposite, and furthest aft the owner's double stateroom. Motor completely controlled from bridge. Boat must be seen to be appreciated. Finish of Honduras mahogany throughout. Best construction. An exceptional opportunity for some one desiring a roomy high grade cruiser of latest type. Available at low figure. For full particulars, plans, etc., apply to Cox & Stevens, 15 William Street, New York City.

No. 1016—For Sale—Well-known, able schooner yacht, 96 ft. o. a., 85 ft. w. l., 22 ft. beam, 8 ft. 6 in. draught. In good condition, having been overhauled last Summer. Five staterooms, one of them double. Large saloon. Bathroom. Very comfortable crew's quarters. Flush deck. Nicely finished. Fully found for cruising. Can be purchased for a low figure. Is bored for motor, and one could easily be installed. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

No. 1804—For Sale—Well-known steam houseboat, 100x92.3 x23.4x6 ft. Designed by Tams, Lemoine & Crane, built 1901. Unusually heavily constructed. Large equipment of boats including launch. Unusual accommodations consisting of six staterooms, two bathrooms, saloon, three toilet rooms below, large sitting room on deck. Least headroom 6 ft. 6 in. Compound engine 8-in. and 16-in., stroke 13-in. Almy boilers. Speed 8 knots. Unusual opportunity to purchase a boat for a low figure. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.



940



1804



168

No. 168—For Sale—Lawley keel knockabout designed by A. S. Cheseborough, 41 ft. o. a., 27 ft. 6 in. l. w. l., 10 ft. beam, 5 ft. 10 in. draught; 9,000 lb outside lead ballast, two suits of sails, light sails, all spars new by Lawley, 1909; standing rigging new 1909; running rigging new 1910; steers with wheel, Edson gear; roomy, water-tight cockpit, bright white pine decks; large cabin finished throughout in paneled mahogany and butternut; large closets, two extension transoms, shelves in rear; sideboards with drawers under in main cabin; large toilet room with Sands' folding basin; galley contains coal stove, dish lockers, drawers, etc., folding berth forward, room for two if desired. Boat is very fast and able and rates low under Universal Rating Rule; has won numerous ocean races and class prizes, but is distinctly a cruising boat. Is completely equipped for cruising, including Lawley cedar tender, cushions, table, compass, cabin side and riding lights, anchors, cables, etc. Is in first-class condition throughout and can be bought at a reasonable figure. Is a typical Lawley cruiser and one of the best boats of this type available. Inspectable near Boston. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 7523—For Sale—Able modern cruising motor yacht,

66 ft. o. a., 56 ft. w. l., 13 ft. 6 in. beam, 4 ft. 2 in. draught. Built 1903. Equipped with a 40-h.p. motor. Large gasoline tank capacity. Main saloon aft with four transom berths having lockers under them. Has a stateroom with berth, large galley and toilet room. Forward saloon also has four berths, giving unusual cruising accommodations. Comfortable crew's quarters. Is in excellent condition, having always had the best of care. Fully found in every way. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 1006—For Sale or Charter—Exceptionally comfortable and roomy, light-draught houseboat, 77.6 ft. o. a., 16.6 ft. beam, 24 in. draught. Extra heavy construction. Deckhouse is 50 ft. long with 2-ft. passage on each side and large after deck. It contains owner's stateroom with bath, toilet, wash-basin, etc., at after end, next aft being social hall 24 ft. long with large divan for sleeping, desk, book-racks, etc. Below are double stateroom, dining room, kitchen, pantry, crew's quarters and two toilets. Attractively decorated. Mission furniture above, Chippendale mahogany below. Price very reasonable. Plans, etc., Gielow & Orr, 52 Broadway, New York City.



7523



1006



2236

No. 2236—For Sale—The only American Yacht Club one-design 21-ft. raceabout that is available. Has won championship in her class. Very fast. 33 ft. 4 in. o. a., 20 ft. 9 in. w. l., 7 ft. 5 in. beam, 5 ft. 5 in. draught. Designed by Crowninshield and built under his supervision: best possible construction. Built 1902. Complete suit of sails and hollow spars. 3,500 lb lead ballast. Unusual opportunity to purchase a fast, attractive day boat at a low figure. Has always had the best of care and is in good condition. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, N. Y. City.

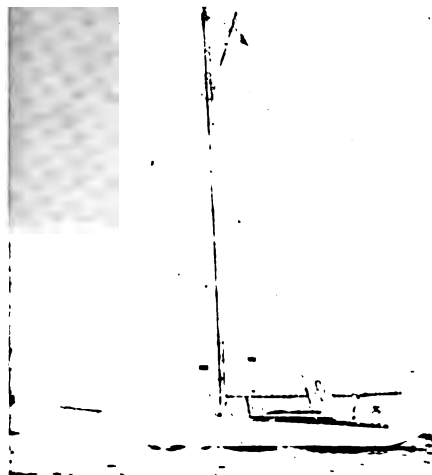
No. 1163—For Sale—Fast keel knockabout, 26x17x6.4x4.2 ft. draught. Built 1906. 1,000 lb outside lead ballast. Spars and



1163

sails in good condition. Owner anxious to sell. Price very attractive. Apply to Cox & Stevens, 15 William Street, N. Y. City.

No. 2522—For Sale—Sloop yacht designed by Tams, Lemoine & Crane. 34.6x23.4x7.3x5.6 ft. Very well constructed. Complete equipment of sails. Excellent



2522



201

condition. 5,000 lb of lead. Large water-tight, self-bailing cockpit. Two transom berths in cabin. Has toilet under transoms. Ice-box. Very well-known boat. Excellent condition. Complete equipment. Champion of Class "Q" in 1905. Not raced in 1906 and 1907. In 1908, twelve firsts, two seconds, one third. In 1909 won two firsts, raced twice. Complete particulars can be had from Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 201—For Sale—High-speed steam launch. Ideal for fast ferry service between city and Summer residence. 45 ft. long, 8 ft. beam, 2 ft. 6 in. draught. Built by W. Starling Burgess Co. in 1907. Herreshoff water-tube boiler (re-tubed 1910) and 4-cylinder, triple-expansion Daring type Thornycroft engine. Sustained speed 16 miles. Main cabin 8 ft. long, contains sofa 7x3 ft. Good galley and w. c. Cruised last Summer to Nova Scotia, demonstrating seaworthiness together with reliability, silence and freedom from vibration unattainable without steam. Apply to Charles P. Burgess, 40 Central Street, Boston, Mass.

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No. 3456—For Sale—Crack Sonder Klasse yacht, designed by E. A. Boardman and built by David Fenton of Manchester, Mass., 1907. 37 ft. o. a., 19 ft. 4 in. w. l., 7 ft. 2 in. beam, 5 ft. 6 in. draught. Built in the very finest manner with mahogany planking, copper fastenings, oak frames; 2,000 lb lead on her keel. Sails made by Wilson & Silsby, used only one season and in very fine condition. Rigging, hull, etc., in perfect condition. This boat can be seen near Boston and is a bargain. An admirable fast day sailing boat. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3456



311

No. 311—For Sale—Handsome, able 45-ft. cruising launch from designs of Swasey, Raymond & Page. This boat was constructed in the best possible manner in 1907. In design she is very attractive and condition at the present time is excellent. Power plant consists of 4-cylinder Buffalo motor and the normal speed of the boat is in excess of 11 miles an hour. The arrangement plan shows comfortable sleeping quarters for four guests besides the crew. There is a large toilet and ample locker space. The deck plans show the forward deck about 10 ft., wide water-ways. A bridge deck with engine controls steering wheel and a very commodious cockpit. This boat has always had good care and could be put in commission at a very slight expense. It is offered for sale at a low figure and is worth a consideration for any person desiring a reliable, handsome and seaworthy cruiser. Further particulars from American Marine Brokerage Company, 100 Boylston Street, Boston, Mass.

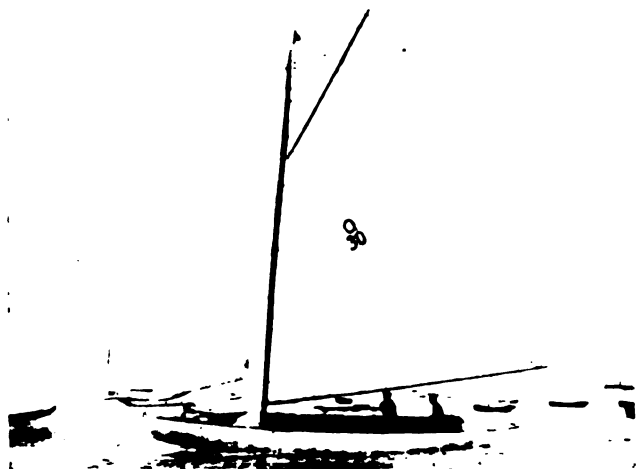
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No. 3897—Bargain—Boston knockabout, 31.6x20.0x4.8. 2,000 lb lead on keel; no centerboard. Built 1904 by Jensen of Gloucester after Crowninshield design in best possible manner. Bronze

fittings, oak frames, cedar planking, bright deck with mahogany trim. Large, cozy cabin with lockers, berths for three and ice-box, and self-bailing cockpit all finished in mahogany. The boat is absolutely tight and always had best of care; is fast and able and a very good sea-boat, particularly to windward. Complete inventory for cruising, tender, mooring, etc. Sails and rigging and everything as good as new. A. J. Menten, Bath Beach, N. Y. Phone 5740 Madison Square.

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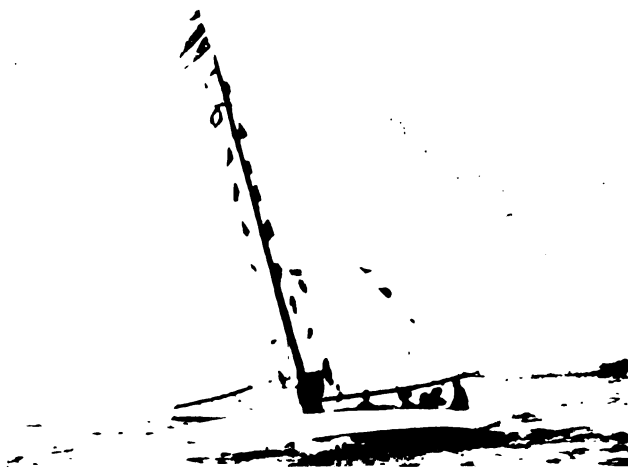
No. 3478—For Sale—40-ft. launch, designed and built by Toppan Boat Co., 1906. 10 ft. beam, 2 ft. draught. Truscott motor, 15-20-h.p.; speed 10 miles. Cabin 10 ft. long, with toilet and w. c.; nickel-plated plumbing. Side seats with lockers under full length of boat. Completely fitted out, 11-ft. tender, whistle and wheel, side and riding lights, leather cushions with duck covers, life-preservers, curtains, carpet, steps, etc. Picture shows her stripped of brass rail and fittings, ready for Winter. A fine, able sea-boat of dory model. 60-gal. gasoline tank. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



3897



3478



3888

No. 3888—For Sale—Buy a winner. Fastest, ablest and handsomest 21-footer in Massachusetts Bay, designed by Crowninshield. 33 ft. o. a., 21 ft. w. l., 8 ft. beam, 5 ft. draught. 3,800 lb lead all outside, bright decks, large roomy cockpit, comfortable cabin. Hull, sails and rigging in first-class condition. Hollow mast, 11-ft. keel tender. Balance is perfect and boat is easy to handle for afternoon sailing or racing. Record 1910, four starts, finished seventeen firsts, four seconds. Price reasonable. Full particulars of Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

For Sale—28-ft. canoe stern, dead rise model power boat Colonel; draws 2 ft. of water, has half-cabin, 4-cylinder, 16-h.p. high-speed Regal engine. Cost to build \$1,050. Intended for use as a fast ferryboat, but only used on trial trips. Address Captain Albert Mathis, 315 North Massachusetts Avenue, Atlantic City, N. J. Keystone and Coast Phones 389.

* * *

For Sale—28-ft. scow, 839. Built 1910 by Albert Gale, Tuckerton, N. J., at a cost of \$555. A simple but very fast model, with 15-h.p. Ferro engine. Address Captain Albert Mathis, 315 North Massachusetts Avenue, Atlantic City, N. J. Where boats may be inspected. Keystone and Coast Phones 389.

* * *

No. 4152—For Sale—Hugi, M. Y. R. A. 18-footer, 31x18x7.3x5 ft. 1,750 lb lead, bright decks, all mahogany trim, cabin white and mahogany with two berths and four lockers. Two suits working sails, one Ratsey, 1910, spinnakers, ballooners light air working jib No. 2, and stern jib. Rigging special plough steel and fancy Plymouth Manila, new 1910. Hollow spars throughout by Lawley, boom and gaff new 1910. Inventory



4152



1830

includes deck awning, cushions, lights, compass in cockpit floor and everything necessary for racing or cruising. Everything about boat is like new and requires very little expense to place in commission. Designed and built by Lawley, 1904. One of the ablest boats of her size afloat with a remarkable record, having won 35 prizes in the last two seasons. Champion N. B. Y. R. A. 1909 and winner of the Race Week's shield 1910 and 1909, the Mid-Summer Series at Marblehead, 1910, against the entire class and numerous trophies not only in her own class, but in long-distance races against much bigger boats. Apply to T. R. Goodwin, Riverside, R. I.

* * *

No. 1830—For Sale—Centerboard sloop. Dimensions: 37 ft. on deck, 27 ft. w. l., 11 ft. beam and 3 ft. draught. 4,000 lb inside lead ballast. Full headroom in cabin with four berths. Sails new last season. One of the best and ablest of the light draught cruisers. Is heavily built and perfectly sound. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

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No. 4029—For Sale—Hunting cabin cruiser, 27x7½x1½; speed 8 miles. Transom stern. Built 1909. 10-ft. cabin, oak and cypress varnished, pantasote hair cushions, clothes closet, galley, stoves, ice-box, dish locker, etc. Cockpit 10 ft., lazyback seat in stern and awning. 5-h.p. Lozier motor in cockpit, Michigan reverse propeller, 30-gal. copper tank. Boat lighted by gas; Solar generator. 10-ft. varnished cedar dinghy, two anchors and cables, searchlight, sailing lights, etc. Outfit in perfect condition, easy to operate and economical to run. Inspectable New York. Price \$650. Joseph Skelding, Room 1101, 299 Broadway, New York City.



4029



6518

No. 6518—For Sale—Steam yacht now on St. Lawrence at very low figure as owner has larger boat. 70x68x9.6x2.6 ft. Unusually good day boat, but has ample cruising accommodations. Oak frames, mahogany planking. Designed by Gardner. Maximum speed 18 miles. Four tons of coal. 6 ft. 6 in. headroom. Comfortable sleeping accommodations for four people. Very nicely finished throughout. Lighted by acetylene gas. Boat and davits. Has awnings. Most complete inventory. Is in excellent condition in every way. Unusual opportunity to buy a boat of this type. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

No. 5715—For Sale—Cruising launch, 50 ft. o. a., 9½ ft. beam, 3½ ft. draught. Built 1904. Fine light and ventilation. Extra heavy construction. Fore and after saloons berth six comfortably. Toilet room. Galley. Headroom 6 ft. 3 in. After deck



5715

13 ft. long, 24-h.p. Murray & Tregurtha motor; speed 10 miles. Cruising inventory. Price \$750; big bargain. Address my Agents, Seaman & Huntington, 220 Broadway, New York City.



3912



4051

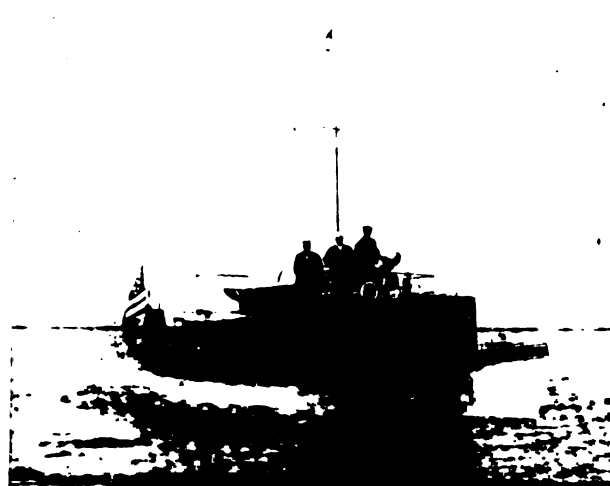
No. 3912—For Sale—Fast 30-ft. w. l. sloop, 50 ft. o. a., 10 ft. 9 in. beam, and 7 ft. 3 in. draught. Exceptionally well built with 10-ft. cockpit. Outside lead ballast, etc. Cabin has 5 ft. 2 in. headroom and is 12 ft. long, finished in white and mahogany. Wilson & Silsby sails 1,100 sq. ft. in area. This yacht is very easy to handle, and is an ideal boat for day sailing or cruising. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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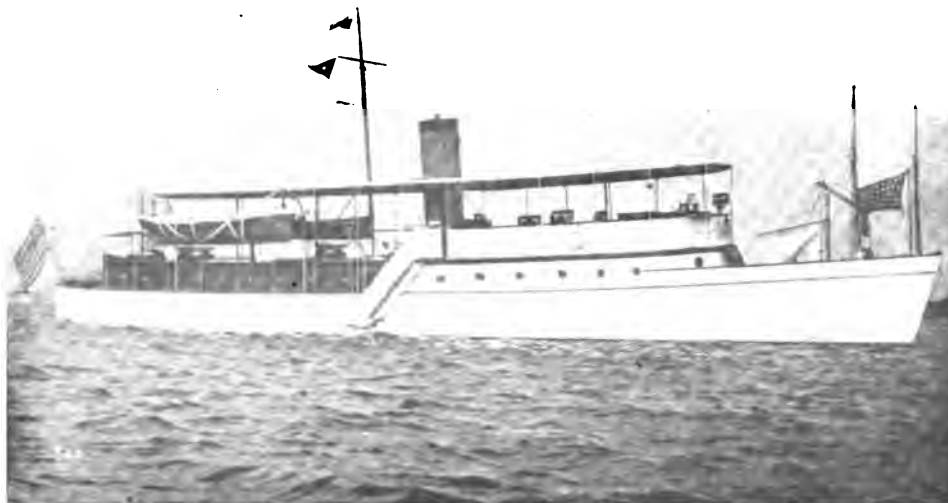
No. 4051—For Sale—Bargain—Auxiliary sloop 40x13½x3 with complete sailing inventory. Whole outfit in first-class condition; 18-25 heavy-duty Standard engine in perfect order. For details or price, address "Sloop," 327 Central Avenue, Jersey City, N. J.

* * *

No. 4159—For Sale—To close an estate. Gasolene power yacht Olive. Built 1907 at Atlantic City, where she now lies. Length 45 ft, beam 12 ft. 4 in., extreme draught 3 ft. Canoe stern, steers and controls from bridge deck. Cabin sleeps four, forecabin sleeps two; galley, toilet room, etc.; inventory complete; lighted by electricity. Has searchlight. 28-h.p. high-speed Regal engine (cost \$2,000) installed new in Spring, 1910. Has driven boat 12 miles per hour. Piping from tanks taken outboard along keel. This boat was substantially built under owner's supervision; is finished in solid mahogany and brass and absolutely no expense has been spared to keep her up and to make her complete in every detail. \$12,000 was spent on her previous to installing new engine mentioned. She is suitable for any of the shallow coast sounds or bays and has made many trips on blue water. Inspectable. Address Captain Albert Mathis, 315 North Massachusetts Avenue, Atlantic City, N. J. Keystone and Coast Phones 389.



4159



7291

No. 7291—For Sale—Very able, seagoing, cruising yacht, 92x89x13x4 ft. 2 in. 20th Century motor, 6-cylinder, 9x10, 105 nominal h.p. The best appointed, fitted and furnished yacht of her size on the Atlantic coast. She has an unusual amount of deck space. Accommodations liberal, consisting of a large saloon, two staterooms and a bathroom in addition to comfortable crew's quarters, galley and well-ventilated engine room. Solid mahogany finish throughout. (Examine photograph.) Yacht open for inspection. For further particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

You can have a houseboat very cheap. Steam yacht hull 100x90x13x3½ ft. Mahogany trim, low trunk cabin, very roomy, once a magnificent boat and now in fair usable condition. Out of water and can be fully inspected. Will sell hull only for a little above junk price. A big bargain for somebody. Call or address "Hull," Room 303, 76 William Street, New York City.

* * *

No. 4028—For Sale—\$115. Bargain to quick buyer. Sloop 19 ft. 4 in. o. a., 15 ft. 6 in. w. l., 8 ft. beam, 22 in. draught. Now cat-rigged, but bowsprit and rigging, now stored, can be replaced and mast moved aft again without trouble. White oak keel, stem, transom and frame. Cedar planking below waterline; cypress above. Steel centerboard, V bottom. Stiff, able

and sound. Lumber, fittings, etc., cost over \$200, exclusive of labor. Built 1906 and used but two months each year since then, during the Summer season, and is absolutely sound in every particular. Cedar deck and cabin top, canvas covered. Laid up at Green's railway, small harbor, Oak Bluffs, Marthas Vineyard Island, Mass. Has always been kept in first-class condition and had best of care. Sails and rigging comparatively new and in good condition. Owner has cruised in her in all waters between New York and Boston. Just the boat for a boy to obtain experience in as she is stiff and able and could not sink even if capsized. An engine could be easily installed. Only reason for selling is that owner has larger boat. For particulars write Walter H. Coursen, 821 Connell Bldg., Scranton, Pa.

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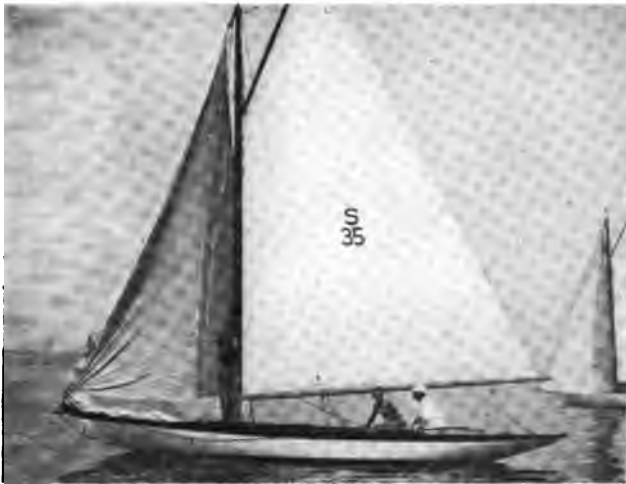
No. 4138—For Sale—Very attractive, modern, keel yawl, easy to handle; fast and with unusually large cabin and cockpit accommodations. Built 1905. 52 ft. o. a., 35 ft. w. l., 14 ft. 3 in. beam and 6 ft. 6 in. draught. 1,100 lb of outside ballast. Cabin has 6 ft. 2 in. headroom and is 14 ft. 6 in. long with four berths and wide transoms. The ample beam of this yacht makes her cabin very spacious and she can sleep eight people aft and two forward if desired. Large water-tight cockpit. Since the photograph was taken her mizzen has been moved aft a little and a boomkin added. Very reasonable figure buys her. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



4028



4138



2763

No. 2763—For Sale—Class "S" sloop. One of the fastest boats of her size afloat. Gielow design; built by Robert Jacob, 1909. 27.10x19.5x6.7x3 ft. draught. Best construction: copper riveted, single planked. 2,500 lb lead bolted on keel. Practically non-sinkable. Self-bailing cockpit. Won the cup in her class season 1909, and many other prizes. Complete suit of sails by Griffin, 1910. Offer desired. Gielow & Orr, 52 Broadway, New York City.

* * *

No. 4134—For Sale—One 25½-ft. Gurnet dory, 6 ft. 6 in. beam, built by The Atlantic Co., Amesbury, Mass., and in prac-



4134

tically new condition. Boat has 10-h.p. Atlantic Special motor, Paragon reverse gear, Perfex ignition; equipped with side seats,



2142



4161

tan leather substitute cushions, cork filled; ice-box arranged under side seat; large locker forward with side shelves for tools. Double gasoline tanks under forward and aft decks of copper with double swash partitions; seamless copper tube to carburetor with Lunkenheimer spring key shut-offs. Equipment consists of spray-hood and apron, anchor, line, lights and miscellaneous tools. This boat has proved itself in my use the very best sea-boat imaginable. Price \$750. E. E. Banks, 27 Haverhill Street, Boston, Mass.

* * *

No. 2142—For Sale—Unusual opportunity to get a bargain. Shallow draught sloop, 24 ft. o. a., 18 ft. 6 in. w. l., 8 ft. beam, 20 in. draught. Centerboard, trunk cabin sloop. Oak frames, cedar planking. Designed and built by Gill Smith, 1903. Wilson sails 1908, two complete suits. 750 lb of ballast. Cockpit 6x5 ft. Three berths. New cabin last year. Thoroughly first-class condition throughout. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 4161—For Sale—Bargain in Sloop. Wanda, 25 ft. 6 in. o. a., 10 ft. beam, 5 ft. draught. Keel, large cabin, sleeps five. Good inventory. Mahogany wheel and mahogany and brass skylight; self-bailing cockpit. Easily handled. Lying at Newport, R. I. Reason for selling, owner has moved away from coast. \$250. H. L. Taylor, 1737 17th Street N. W., Washington, D. C., or A. O. D. Taylor, 122 Bellevue Avenue, Newport, R. I.

* * *

No. 741—For Sale—An exceptionally fast cruiser; good sea-boat; very comfortable and completely equipped. 36x32x7.6x2.8; built 1909; 45-h.p. Jager motor; speed 12 miles. Price reasonable. A. J. McIntosh Yacht Agency, 32 Broadway, New York City.



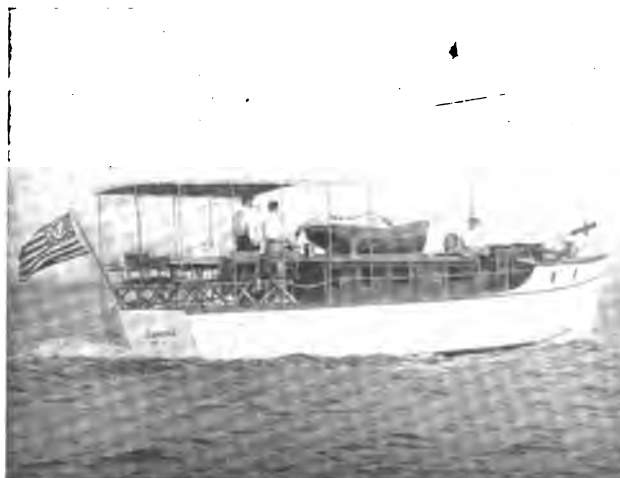
741



490

No. 490—For Sale—Attractive auxiliary keel cruising yawl, designed by I. B. Mills, built by Hodgdon in 1901 in best manner, 46 ft. o. a., 33 ft. w. l., 12 ft. beam, 6 ft. draught. 4 tons outside ballast, moderate rig. Has a roomy cockpit under which is a 9-h.p., 2-cylinder Palmer engine, new 1908; main cabin with two transoms and two fixed berths. Double stateroom with two berths, toilet room, lockers, etc., all finished in paneled mahogany; galley with ice-box, stove space, etc., pipe berth forward. Is completely equipped in every detail for extended cruising; everything in first-class condition, including mattresses, cushions, carpets, dishes, cooking utensils, compass and binnacle lights, cabin lamps, table, two anchors, two cables, awnings, large water tank, berth forward, 6 ft. 1 in. headroom throughout; sails in A-1 condition with spinnaker and balloon jib, cedar tender. Speed under power $6\frac{1}{2}$ miles. Is strongly constructed and will not pound in rough water and has a fair turn of speed. Inspectable near Boston. Apply to J. G. Alden, Yacht Broker, 27 Kilby Street, Boston, Mass.

No. 7743—For Sale—Raised deck motor yacht, 43x38.6x10x3 ft. Built 1909. 18-h.p. Standard motor. 10 knots. Heavily

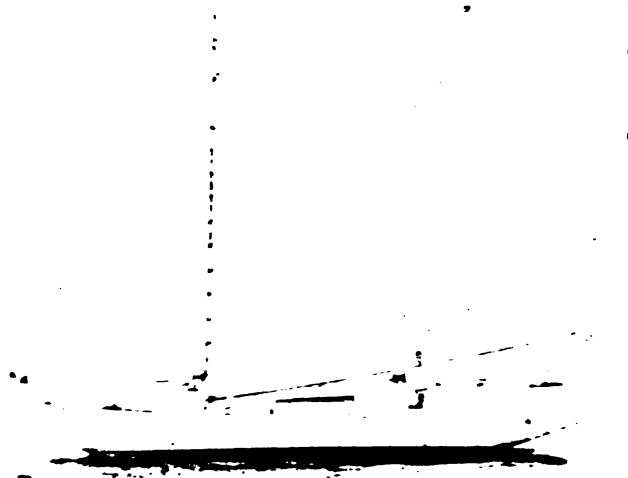


7743

and well constructed. Excellent condition. Aft has flush deck 11 ft. long. Motor controlled from wheel. 6 ft. 3 in. headroom. Forward stateroom with two berths. Aft on port side toilet room. Starboard side companionway to deck. Then saloon, two transom berths will sleep four; motor room, crew's quarters and galley follow. Finished in white enamel and mahogany. Large gasoline and water tanks. Complete cruising equipment. Able boat. Full particulars from Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 647—For Sale—Keel cabin knockabout, 31 ft. 7 in. o. a., 21 ft. l. w. l., 8 ft. beam, 4 ft. 8 in. draught, designed and built by George Lawley & Son, South Boston, in 1899; copper fastening, 3,500 lb outside lead ballast. Is a smart sailer, especially in a breeze, and sharp enough forward so as not to pound in rough water; water-tight cockpit, anchor, cable, new plush cushions, awnings, stoves, roomy cabin with transoms, ice-chest, etc. Has electric lights. Is in first-class condition throughout. Apply to John G. Alden, 27 Kilby St., Boston, Mass.



647



4043

No. 4043—For Sale—Well-known sloop Little Hope. Built 1906 in the strongest possible manner and handsomely finished. 47 ft. 6 in. o. a., 38 ft. w. l., 11 ft. 8 in. beam and 7 ft. 6 in. draught. 15.66 gross tonnage. Freeboard 2 ft. 6 in. least. Wood, copper fastened throughout. Frames oak, 5 in. sectional area, 9 in. apart. Planking hard pine $1\frac{1}{4}$ in. thick. Deck also hard pine, canvas covered. Lead ballast, 8,000 lb outside, 2,000 lb inside. Cabin, four transoms and toilet. Cabin finish, pine, bright. Headroom 6 ft. 2 in., length 14 ft. Water tanks, two; capacity 100 gal. Two pipe berths. Wilson & Silsby sails, covers, awnings, etc., all good. Two new double shrouds, new 1909. Halyards, sheets, etc., mostly new in 1908. Light sails 1906; main, jib and staysail new 1908, and another jib and staysail 1906 in fair condition. Also small jib, storm staysail and trysail in good condition. Two tenders, one 14 ft. long, built 1905 by Graves; the other 11 ft. long, built 1907 by Emmons. Two anchors, compass lighted by electricity. Inspectable near Boston. Little Hope has cruised from Marblehead to Newfoundland and Nova Scotia twice and is noted for her deep-sea cruising abilities. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 4044—For Sale—Cabin 18-footer. Built under restrictions of Massachusetts Bay Yacht Racing Association 18-ft. class. Designed by Boardman and built by Fenton in 1906. 30 ft. $11\frac{3}{4}$ in. o. a., 17 ft. $11\frac{1}{2}$ in. w. l., 7 ft. 6 in. beam and 5 ft. draught. Planked with cedar and copper fastenings. 6-ft. water-tight cockpit. 2,105 lb of lead on keel. Wilson & Silsby sails, 450 sq. ft. in area. Cabin is 7 ft. long and has 4 ft. headroom. A splendid all-around boat for day sailing or cruising. Complete outfit. Everything in best of order. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

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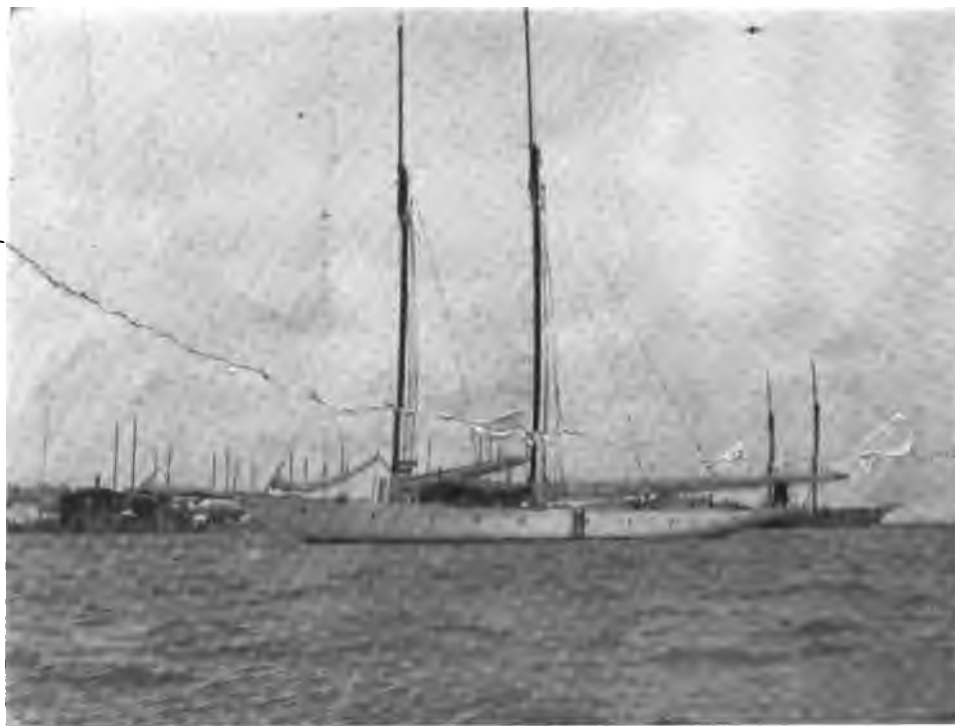
No. 4050—For Sale—Auxiliary keel sloop Sylvia, 30 ft. o. a., 10 ft. beam, 5 ft. 6 in. draught. Built 1906 for present owner's use. Very solidly constructed throughout. Oak frame and white cedar plank. Iron keel. 4-h.p. Ellsworth engine in first-class condition. Sails and rigging in good order. Two anchors and rode. Dirigo compass, running lamps, etc. Large cockpit and room in cabin for four to sleep. An excellent opportunity to obtain an exceptionally able and fast boat of a healthy type so much in demand at the present time. Price very reasonable. Apply to E. M. Sherman, Lexington, Mass.



4044



4050

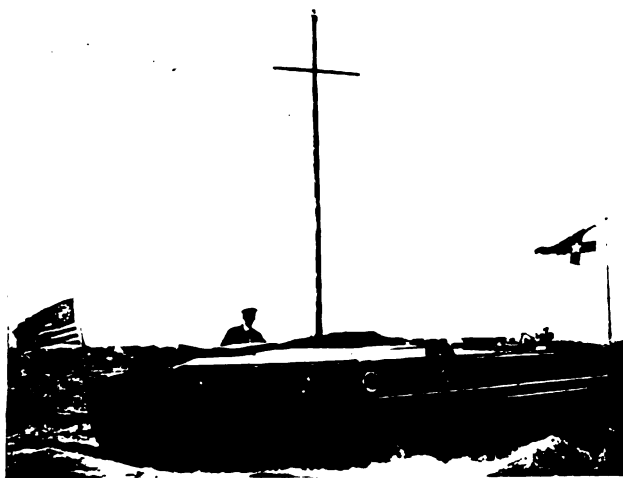


1167

No. 1167—For Sale—Fine, steel auxiliary schooner yacht, length o. a. 89 ft., w. l. 63 ft., beam 18 ft., draught 8 ft. 3 in.; built by Lawley; flush deck; equipped with 45-h.p. Craig engine, new 1908, perfect condition; feathering propeller; speed 8 miles; complete new suit of sails, never been used; two boats (dinghy and launch); accommodation: two double and two single staterooms, large main saloon, bathroom, two toilets, galley and forecabin. 6 ft. 3 in. headroom. Interior finish of maple. Price reasonable. For further particulars apply William Gardner, Naval Architect and Yacht Broker, 1 Broadway, New York City. Telephone, 3585 Rector.

* * *

No. 4133—For Sale—Cruising motor boat, designed and built by M. J. Casey at New Bedford, Mass., in 1909. 36 ft. 6 in. long, 9 ft. 6 in. beam and 3 ft. 6 in. draught. Built in the best manner and equipped with a 15-h.p. Murray & Tregurtha motor, two gasoline tanks, 140-gal. capacity, located under cockpit seats. Water-tight cockpit 7 ft. long. Cabin is 20 ft. long and has 6 ft. 3 in. headroom, finished in mahogany, cedar and white. Large galley, sink, wash-basin, toilet, dishes, cushions, blankets, lights, two water-tanks, 60-gal. capacity. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



4133

No. 6496—For Sale—Lifeboat launch with high turtle-back deck forward, forming cabin, giving two transoms. 26 ft. o. a., 6 ft. beam, 1½ ft. draught. Launched 1904. Substantially constructed, copper fastenings. 8-h.p. Lackawanna motor, new

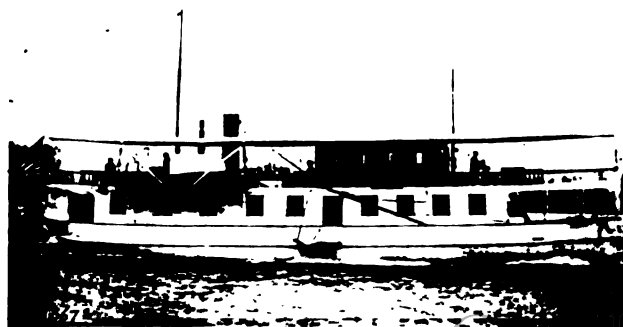


6496

1908; speed 7 to 8 miles. Completely equipped. Whole outfit in first-class shape. Low price. Address the Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 367—For Sale—Very desirable twin-screw power houseboat, 84.6 ft. o. a., 76 ft. w. l., 23.6 ft. beam, 4 ft. draught. Unusually large accommodations, including three double staterooms, large main and dining saloons, two bathrooms, etc. Speed 10-12 miles; two 70-h.p. motors. First-class condition; bargain. Apply to Cox & Stevens, 15 William Street, New York City.



367



4137

No. 4137—For Sale—Motor yacht Vincent III, 50x10.6x3.6. Built by Britt Bros., West Lynn, Mass., and launched August 8, 1910, and is now only eight months old. The boat is built in the best possible manner, of the very best material possible to secure and is a fine sea-boat. Has a forward stateroom, containing two transom berths and toilet, then next aft is engine room, containing porcelain lavatory, transom berth, work bench and three closets. Next aft of bulkhead is separate galley complete in every detail, the above is all finished bright in cypress. Saloon contains two mohair plush Hale & Kilburn cushions, two book cases, china closet, and four lockers, all with loaded glass doors, sideboard, also locker for food, and large wardrobe. Stateroom contains double bed, sofa berth, dresser and writing desk, wardrobe, and toilet room, saloon and stateroom finished in African mahogany. 25-32-h.p., 4-cylinder Standard motor, Holtzet Cabot dynamo, for charging storage batteries, which are 12-volt, 160-ampere-hours. Cedar tender 11 ft. long on davits. The whole layout is strictly high-grade and is the best that money can buy and is complete in every detail. Speed 11-12 miles per hour. Boat can be seen at Atlantic City, N. J. This is a chance to secure the best boat in every way, for its size,

afloat. Address owner, E. F. Hall, Champion Building, Atlantic City, N. J.

* * *

No. 3887—For Sale—Raceabout Kestrel, 34x21x9, draught 3½ ft. Crowninshield design. Lead keel with centerboard; copper fastened; non-sinkable. A fast, able, well-built boat, in good condition. Sails and running rigging new 1910. Winner first prize, Atlantic Race Week. Price \$600. D. G. Whitlock, 1 Liberty Street, New York City.

* * *

No. 7280—For Sale—Attractive cruising motor boat, 50 ft. o. a., 9 ft. 6 in. beam, 3 ft. 6 in. draught. Copper fastened and riveted. Oak frames, cedar planking, finished throughout in mahogany. Built 1900. 6-cylinder, 40-h.p. Lamb motor, installed 1906. Speed 12 miles. 150-gal. gasoline tank. Lighted by electricity. Good-size flush deck aft. 6 ft. headroom. Has slightly raised pilothouse with transom berths. Main saloon with transom berths. Engine room, toilet room, galley, crew's quarters. Carries 10-ft. tender. Two large ice-boxes. Fully found in every way for cruising. For particulars apply Tams, Lemoine & Crane, 52 Pine Street, New York City.



3887



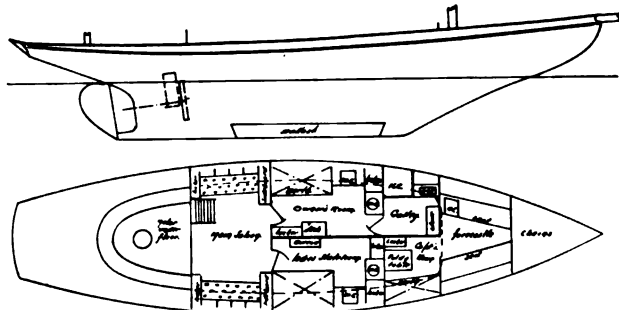
7280



584

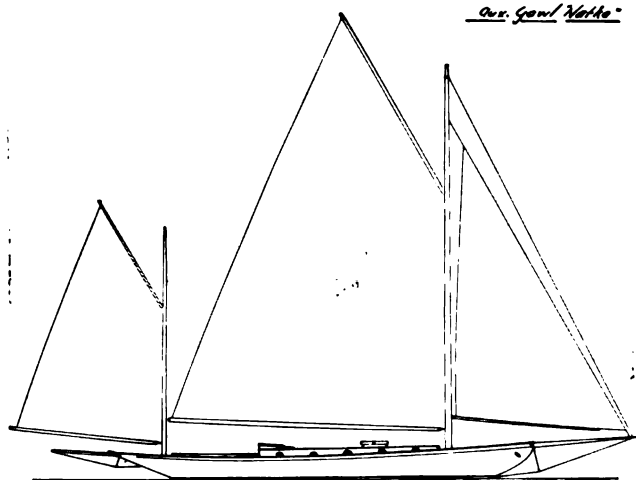
No. 584—For Sale—Bargain—Cabin knockabout, 33 ft. o. a., 21 ft. l. w. l., 8 ft. beam, 4 ft. 9 in. draught, designed and built by Marblehead Yacht Yard in 1899; has water-tight cockpit 8 ft. long, forward of which is cabin with closet, two transoms, Shipmate range, dish lockers, etc.; 4 ft. 9 in. headroom, has exceptional equipment, including bright cedar tender, cushions, pillows, lights, Shipmate range, dishes, tinware, two anchors, two rode, charts, fenders, binnacle with compass, life-preservers, etc., sails in good condition, including storm jib and spinnaker. Is a smart sailer and very stiff, paint burnt off last year. Offered for sale as owner is moving West and is unable to use her. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 819—For Sale—Auxiliary yawl. Dimensions: 72 ft. on deck, 51 ft. w. l., 16 ft. 4 in. beam and 6 ft. 5 in. draught



819

(with centerboard up). Accommodations include two state-rooms, saloon, captain's room and galley. Headroom in cabin



819



4131

6 ft. 4 in. Engine is a 4-cylinder Murray & Tregurtha, installed last Summer. This gives the boat a speed of 8½ miles. This yacht is a desirable cruiser, is well kept up and in first-class condition. She is particularly commodious and well arranged. The cuts herewith show single head rig. She now has double head rig. Also the motor shown is the former motor which was replaced last Summer. The yacht is offered at a price way below her real value on account of the illness of the owner. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

No. 4131—For Sale—Handy 21-ft. knockabout. Just the boat for an afternoon sail. Easy to handle, stiff and fast. 34 ft. o. a., 7 ft. 10 in. beam and 5 ft. draught. Built in 1901 and has always had the very best of care. Sails made by Wilson & Silsby in 1909 and in fine condition. Mainsail, jib, balloon jib and storm jib. 300 lb of lead ballast on keel. Water-tight cockpit. Space under deck for two boys to sleep, with transoms and cork cushions. Cockpit very roomy and seats ten or a dozen people without crowding. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 6495—For Sale—Latest type raised deck cruiser, 45 ft. o. a., 10½ ft. beam, 3.4 ft. draught. Launched 1910 from Bowes design. Extra heavy construction. Headroom 6 ft. 3 in. Forward and after saloons berth five comfortably; can be arranged to accommodate five more. Engine compartment amidships, contains galley and berth for man. 30-h.p., 4-cycle, Reeves-Graef motor. Speed 10½ miles. All controls within reach of helmsman. Completely equipped. Perfect shape throughout. Cost \$5,500. Price \$3,500. Inspectable near New York. Address my Agents, Seaman & Huntington, 220 Broadway, New York City.



6495



4132

No. 4132—For Sale—Very fast Herreshoff composite keel sloop, 31 gross tonnage, 73 ft. 10 in. o. a., 45 ft. w. l., 14 ft. 3 in. beam and 10 ft. 4 in. draught. Built in 1900 with the usual Herreshoff construction. Flush deck with small helmsman's cockpit. This yacht has always had the best of care and everything about her is in excellent condition. She has a large cabin, with large double stateroom aft and captain's room forward. Toilet room opposite captain's room and toilet forward for crew. Large lazarette for storage of sails. Unusually complete equipment of sails. This yacht is suitable for either cruising or racing and is beautifully balanced; steering with the greatest ease. For sale at a reasonable figure. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 4027—For Sale—Power cruiser, 32x9x2.10 ft. 12-h.p. Standard engine. Built 1905 under owner's personal supervision. Excellent condition. Has had good care and been run exclusively by owner, who wishes to sell only because he has so little time to enjoy the boat. Comfortable sleeping accommodations for four in cabin. Toilet room, galley, 60-gal. gasolene tank. One-man control from cockpit. Full equipment,

including two auxiliary masts and sails. Complete expense account of building and maintenance, also ship's log open to inspection of prospective purchaser. \$1,200 cash. Richard C. Norris, Owner, Elkridge, Md.

* * *

No. 4037—For Sale—This boat is 32 ft. 6 in. o. a., 23 ft. on w. l., 10 ft. 6 in. beam, pole masts, sloop rig, has 1,700 lb outside ballast with centerboard housing in the keel—no centerboard trunk to obstruct the cabin. Sails, also standing and running rigging were new last year. She is equipped with all comforts for cruising. Racing sails, 9-ft. dinghy; everything in first-class condition, and can be put in commission for season's use with simply a coat of paint. She must be seen to be appreciated. F. D. Newton, 1780 Broadway, New York City.



4027



4037



4136

No. 4136—For Sale—Nearly new 35x11 ft. Everything on board for cruising. With or without engine. Asking price \$2,500. C. Claude Scull, Atlantic City, N. J.

* * *

No. 3299—For Sale—Or will exchange for auxiliary yawl or cat, 25 ft. to 30 ft. o. a. Raised deck cruiser, 25x6.6x28 in. draught. Built 1909 in best possible manner; cabin 13 ft. long,



3299

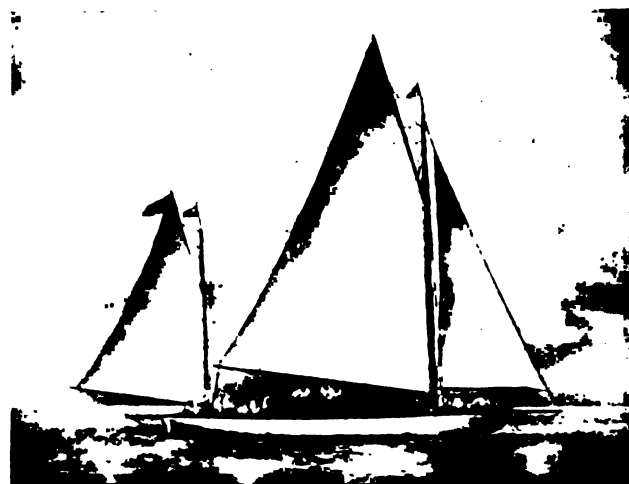
finished in oak and cypress; cockpit 8 ft. 6 in. Engine 2-cylinder, 4-cycle, new 1910; equipped with jump spark and reversible propeller. Full particulars, Gielow & Orr, 52 Broadway, New York City.

* * *

No. 3163—For Sale at Attractive Figure—Desirable day and cruising boat, cedar planking, copper fastened, 29.6x7x7.4x2 ft.



3163



1240

draught. Cockpit 12 ft. 4 in. long. Cabin 8 ft. 6 in. with two transoms and toilet; 30-gal. copper gasoline tank in forepeak. Sterling engine 18-25-h.p., 4-cylinder, fitted with reverse gear; all controls are at steering wheel. Equipment includes anchor, cable, camp chairs, awning, etc., good sea-boat. Further particulars and permit for inspection, address Gielow & Orr, 52 Broadway, New York City.

* * *

No. 1240—For Sale—Light-draught cruising yawl, 42 ft. o. a., 28 ft. w. l., 12 ft. beam, 3 ft. 6 in. draught. Centerboard. Designed and built by James McIntyre, 1904. Built of best selected stock; interior finish mahogany and white. Cabin accommodations: four berths, four transoms, sleeps eight. Toilet, lavatory and water-tank, holding 60 gal. Good refrigerator and galley stove. Furnishings and fittings complete, including 14-ft. power tender. Engine bed and gasoline tank already in place, if purchaser desires to convert to auxiliary. Inspectable Boston. For price, particulars, etc., apply American Marine Brokerage Co., 100 Boylston Street, Boston, Mass.

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No. 4150—For Sale—Centerboard sloop yacht, 32.6x21x9.6 ft. draught, 3 ft. 6 in. without board, which houses in keel, designed by W. H. Hand. White pine deck, mahogany trim, Edson gear, 720 ft. sail area, flat bottomed dinghy. Fast, able, largest small cruiser on Sound. Sleeps four, transoms each 13 ft. 6 in. long; three jibs, trysail, awning. Ostermoor cushions, pillows, blankets, stoves, riding, sailing lights, sails best quality; fine order. Boat is sound and sold for no fault. Owner's change of residence makes sale necessary. Can be seen New Rochelle. Apply M. W. Daboll, 95 Broad Street, or V. C. Brown, 34 West 33d Street, New York City.



4150



4148

No. 4148—For Sale—Exceptional Bargain—Catboat Scat, built and designed by Dan Crosby of Osterville, Mass., in the best possible manner in 1904. L. o. a. 30 ft. 8 in., w. l. 23 ft. 6 in., beam 10 ft. 6 in., draught 18 in.; has large cabin with 5 ft. headroom, complete inventory, Wilson & Silsby crosscut sail of best material. Apply A. R. Sanderson, Providence, R. I.

No. 4135—For Sale—One 20-ft. Gurnet dory, built by The Atlantic Company, Amesbury, Mass.,; used very slightly; equipped with 4-h.p. Atlantic engine, salt-water fittings, bronze



4135

trimmings with galvanized shoe, and rudder; wire center steering cord. Boat is attractively furnished with side seats in forward cockpit and curved seat aft of the engine, fitted with



7867

khaki-covered, cork-filled cushions. Equipment consists of spray-hood and apron, No. 2 Babbit anchor, 100 ft. of line, running lights, fog-horn and miscellaneous tools. This boat proved in my use able, safe and dry in rough weather and a splendid sea-boat. Price \$425 complete. E. E. Banks, 27 Haverhill Street, Boston, Mass.

No. 4053—For Sale—Fastest yawl of her inches in Massachusetts Bay. Dimensions: 38x27.6x14 ft., draught 3 ft.; headroom 5 ft. 8 in. Cabin 14x10 ft; water-tight; standing room 10x8 ft.; sound. Four berths, toilet, stove, ice-chest, draining outboard; set bowl. Well found, including mattresses, pillows, cushions, curtains, dishes, binnacle and compass, two anchors and rode, charts, two hammock chairs, sidesteps, sailing and riding lights, awning, clock and megaphone. Lead ballast. Bright power tender. F. Perkins, 46 Corona St., Boston, Mass.

No. 7867—For Sale—55-ft. w. l. keel cruising cutter. 36 ft. w. l., 11.6 ft. breadth, 7.10 ft. draught. About 10 tons lead outside. Designed by Arthur Binney, built by Lawley. Two bunks and two transoms in cabin; stateroom with one bunk; 2 bunks in forecabin, two w. c's. and lavatories. 6 ft. 2 in. headroom. Sails in fine condition. This is one of the best moderate type cruisers afloat, is very comfortable and luxurious below decks, beautifully fitted up and in perfect condition. She is very able and seaworthy and price very low. Stearns & McKay, Marblehead, Mass.

No. 4048—For Sale—Auxiliary cruising catboat, built by Wallin & Sons. Price \$500. 27x10x2.6 ft. Seen at Wallin's yard, Bay 45th Street, Gravesend Beach, Brooklyn, N. Y. Owner, D. C., 12 Hillcrest Avenue, Elmhurst, L. I.



4053



4048



843

No. 843—For Sale—Substantial cruising motor yacht, designed primarily for rough water work and built from specifications which called for extra heavy construction throughout. This boat is able to go anywhere in any season, and will make a splendid vessel for any one desiring an absolutely safe proposition. L. o. a. 54 ft., w. l. 50 ft., beam 10 ft., draught 4 ft. 6 in. 50-h.p., heavy-duty Standard motor. This combination of extra heavy construction, absolutely safe model and exceptionally reliable motor power, together with the liberal accommodation plan and very low price makes this boat one of the most attractive propositions on the market to-day. The engine room is forward, after which is a toilet, on starboard side, galley on the port. Then a 10-ft. cabin, transoms on each side, with side boards and ample locker space. Then an after cabin with transoms and hanging lockers. These cabins are separated by heavy draperies and practically make up into two staterooms. Each of the four transoms pulls out and will sleep two comfortably. The headroom throughout is 6½ ft. There is a good-sized toilet and lavatory conveniently arranged. The interior finish is mahogany. The ceilings are white. On deck there is a bridge forward, ample water-ways and an after deck about 10 ft. in length. The boat is equipped with davits, military mast and awnings. She is a remarkable boat in seaway and is well worth the consideration of any one desiring a comfortable, safe and reliable yacht at a low figure. Inspectable near Boston. Further particulars from American Marine Brokerage Co., 100 Boylston Street, Boston, Mass.

No. 4026—For Sale—Keel raceabout, 35 ft. 9 in. o. a., 21 ft. w. l., 7 ft. 6 in. beam, 5 ft. 6 in. draught. Designed by W. Starling Burgess and built by David Fenton in 1901. Lead keel, 3,500 lb, copper fastened, fancy bright decks, mahogany seats in water-tight cockpit. Has two transoms in cabin, cushions for same, mainsail, jib, storm jib, spinnaker, balloon jib, sail bags and covers, all new 1910; anchors and rode, compass, lead and line, horn, riding light, brass pump, etc. Condition of boat first-class; is very fast and easily handled. Boat has been kept up in very best manner. Can be seen near Boston. Will be sacrificed. For particulars, address S. L. Gookin, 802 6th Street, South Boston, Mass.

* * *

No. 10528—For Sale—Centerboard and keel auxiliary cruising yawl, launched 1903; in perfect condition. New spars and upholstery 1909. 60 ft. o. a., 40 ft. w. l., 15 ft. beam, 5½ ft. draught. 25-h.p. Standard engine, gives actual speed 8 miles. Heavily constructed. Mahogany deck trimmings. 5 tons ballast on keel. Owner's stateroom and saloon berth five separately. Bath and toilet room. Large galley; foc'sle for two; maintained easily with this crew. 6½ ft. headroom. Electric lighted throughout. Complete cruising equipment, including launch and dinghy in davits. A safe, seagoing cruiser offering advantages of similar length power yacht with almost double accommodations. Always well owned and kept up-to-date. Cost over \$11,000. Price \$3,500. Inspectable New York. Address my Agents, Seaman & Huntington, 220 Broadway, New York City.



4026



10528



616

No. 616—For Sale—Modern gasoline cruiser, 41 ft. 2 in. o. a., 9 ft. 2 in. beam, 3 ft. 2 in. draught. Built 1908 from designs by Binney. Speed 9-10 miles; 25-h.p. Standard motor. Sleeping accommodations for four; toilet room, etc. Fully found. Very able craft; in first-class condition. Excellent bargain. Apply to Cox & Stevens, 15 William Street, New York City, or Arthur Binney, 70 Kilby Street, Boston, Mass.

* * *

No. 2430—For Sale—Desirable, twin-screw power houseboat, 75x20x2 ft. 8 in. draught. Built for comfort; substantially



2430

constructed. Makes a trim appearance and is an excellent heavy weather boat. In first-class condition. The two Standard en-



482



448

gines are located in forward hold. Owner's stateroom and toilet forward on upper deck; four staterooms, bathroom and toilet on main deck. Hardwood floors in staterooms and main hall; parquet floor in saloon. Equipment is most complete in every respect for cruising. Price reasonable. Full particulars apply Gielow & Orr, 52 Broadway, New York City.

* * *

No. 482—For Sale—Attractive auxiliary yawl, 76.5x53x17x7.6 ft. draught. Designed and built by well-known firm. Three staterooms, large saloon, bathroom, etc. Speed under power 7 miles. Excellent craft, in first-class condition. Full particulars from Cox & Stevens, 15 William Street, New York City.

* * *

No. 448—For Sale—Power houseboat, 64.3x17.4x3.6 ft. Built 1907 by Lawley. Best craft of type and size available. Speed 8 miles; 25-h.p. Standard motor. Four staterooms, 12-ft. saloon, bath, etc. Comfortable and very able boat. Price low. Full particulars from Cox & Stevens, 15 William Street, N. Y. City.

* * *

No. 4151—For Sale—The fast Class "Q" sloop Little Rhody II, designed by George Owen and built by Hodgdon Brothers at East Boothbay, Me., in 1907. 37 ft. 6 in. o. a., 25 ft. 6 in. w. l., 8 ft. beam and 5 ft. 10 in. draught. Double-planked with Cuban mahogany and finished bright. One of the handsomest yachts of her size ever built. 5,500 lb of lead on keel. Cabin fitted with lockers, transoms, cushions, etc. Two suits of Wilson & Silsby sails. Just the boat for day sailing or racing, as she is easy to handle, stiff and able. Has won scores of prizes under all conditions of wind and sea. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



4151



422

No. 422—For Sale—Championship winner of Class "Q," in perfect condition throughout. Dimensions: 38 ft. o. a., 26 ft. l. w. l., 8 ft. 6 in. beam, 6 ft. draught. Double-planked with mahogany, bright finish, copper fastened, lead ballast. Three complete suits of racing sails. Offered for sale at attractive figure. For further particulars apply to Krogman & Purdy, 92 State Street, Boston, Mass. * * *

No. 2136—For Sale—Roomy and comfortable houseboat. Main saloon forward, four large staterooms, bathroom and kitchen. Dining room on after deck has 16 French windows.



2136

Interior finished in green and burlap. Forward deck 16 ft. deep and full width of boat. Thoroughly overhauled in 1909 when she had a new bottom, plumbing, toilet, porcelain



4140

bath-tub, and roof. Equipment includes one double iron bedstead and spring, two single iron bedsteads, bureau, double extension cot, extension dining table, chairs, couch, anchor lights, flags, etc. Plans and further particulars from Gielow & Orr, 52 Broadway, New York. * * *

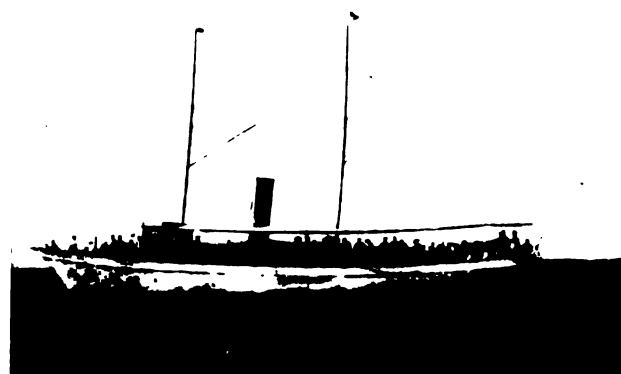
No. 4054—For Sale—Well-known sloop, built by Shiverick. 30x25x12x3 ft. Inside and outside ballast. In good condition and very fast and able. Running and standing rigging in good condition (nearly all new 1910). Wilson & Silsby sails. Good inventory. Hauled out at East Boston. Price reasonable. A. B., 88 Fulton Street, Boston, Mass. * * *

No. 4140—For Sale—31-ft. cabin launch, 6 ft. 8 in. beam and 3 ft. 6 in. draught. Cabin is 14 ft. long and has 5 ft. 6 in. headroom, finished in cherry with w. c., etc. Water-tight cockpit 12 ft. long, lead ballast inside, and tender. 3-cylinder, 2-cycle Vim motor, 18-h.p.; 30-gal. gasoline tank located aft. Full equipment, consisting of awning, cushions, stove, tools, control from cockpit, reverse gear, etc. Best of mahogany in construction throughout. Can be seen near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. * * *

No. 1238—For Sale—Very able, handsome steam yacht which is especially adapted for commercial purposes, 90x74x16x5.6 ft. The license allows her to carry 175 passengers. The construction is of the very best and everything pertaining to this yacht will stand the most rigid examination. Accommodations include a large stateroom, toilet room and an immense cabin with crew's quarters forward. This is an unusual opportunity for one desirous of securing a steam yacht which can be easily converted into a profitable commercial property. Price very low. Further particulars from American Marine Brokerage Co., 100 Boylston Street, Boston, Mass.



4054



1238

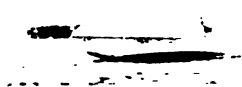


10854

No. 10854—For Sale—Centerboard auxiliary cruiser, 45 ft. o. a., 30 ft. w. l., 12½ ft. beam, 4½ ft. draught. Launched 1902 from Small Bros.' design. Extra heavy construction. Keel ballast. Mahogany deck trimmings. Stateroom. Saloon. Berths four. Toilet room. Galley. Open fireplace in cabin. Two berths in foc'sle. Headroom 6 ft. 3 in. Mahogany interior. 8-h.p. motor, new 1908; speed 6 miles. Complete cruising inventory. An exceptionally able and comfortable cruiser maintained with paid hand. Always well owned. Low price. Address my Agents, Seaman & Huntington, 220 Broadway, New York City.

* * *

No. 4166—For Sale—Keel sloop, safest small boat for any boy or amateur, 25 ft. o. a., 15 ft. w. l., 6 ft. 6 in. beam, 4 ft.



4166

draught. Self-bailing cockpit, 1,000 lb outside ballast; built 1902; sails 1907. Price \$200. Address Box 75, Care Rudder, 1 Hudson Street, New York City.

* * *

No. 4060—For Sale—Very fast 25-footer. 50 ft. o. a., 12



4060



4052

ft. 6 in. beam, 6 ft. 6 in. draught. Strongly constructed. Copper fastened. Unusually roomy cabin, with full headroom; four berths, four transoms, toilet, ice-chest, etc. Sails by Cousens & Pratt. Outside ballast, all lead. This yacht is a great prizewinner and one of the best known on the Atlantic Coast. She is a fine, stylish-looking craft and will make a name for herself wherever she may go. For further particulars and price, apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 4052—For Sale—This boat is complete to the smallest detail. Is ready for use without a cent of expense. Has 10-h.p. Standard motor that has never missed a stroke. Both boat and engine guaranteed to be in absolutely perfect condition. Cost \$2,850, and is worth every cent of it now. Sell \$1,250. Size: 30x8 ft., draws 30 in. Rogers, 1199 Bergen Street, Brooklyn, N. Y.

* * *

No. 379—For Sale—Fast runabout, 33 ft. o. a., 5 ft. 6 in. beam, designed and built by Jacob Boyle, of Lynn, Mass., 1909. Engine forward under hood, large cockpit, 10 ft. long with cross seats, 25-h.p. Sterling engine, new 1909, giving a speed a little better than 15 miles at 850 revolutions; has adjustable awning, anchor, cables, compass, etc. Was designed to be especially dry in rough water and given considerable flare forward for this reason. Strongly constructed with 3-in. keel, 7-in. stem, ½-in. cedar plank, copper fastened; finished in mahogany. In best of condition throughout and can be bought at a very low figure for a high grade boat. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.



379



4155

No. 4155—For Sale—A cabin launch, 30x10x2.6 ft. Good sea-boat. Sash all let down out of sight. 12-h.p., 2-cylinder engine; Roper propeller; 8 miles per hour. 10-ft. tender, Sands' w. c., and folding lavatory. Shipmate stove, ice-box, freshwater tank, hair cushions. Engine and boat controlled from bow. Good comfortable cruiser. S. G. B. Gourlay, 916 Gates Avenue, Brooklyn, N. Y.

* * *

No. 5255—For Sale—Auxiliary yawl. Dimensions: 35 ft. on deck, 25 ft. w. l., 10½ ft. beam and about 3½ ft. draught. Built in 1903. A centerboard boat with inside ballast. Headroom in cabin 5 ft. 8 in., sleeping four persons. The motor is a 2-cylinder, 2-cycle, 8-h.p., built by the Sterling Company and installed in 1907. This boat, as can be judged from the picture, is an excellent all-around light-draught cruiser. Has been well kept up and is in A-1 condition. Sails were new in 1909. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 27806—For Sale—Fine little single-hander, 26 ft. o. a., 18 ft. w. l., 6 ft. 9 in. beam, 4 ft. draught. 1,200 lb outside ballast, and 700 lb inside, making her absolutely uncapsizable. Cabin 8 ft. long, with 3 ft. 6 in. headroom. Complete set of sails, two cushions for cabin, sail covers, compass, etc. Illustration shows view of the boat on dock before the mast was stepped. This is a fine little boat for a boy, on account of her easy handling. She can be bought at a very low price, \$175. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 376—For Sale—Excellent condition throughout and very



27806

complete inventory. 45x10x3 ft. 25-h.p. Standard; full headroom; mahogany inside and out. Price low for a boat of her

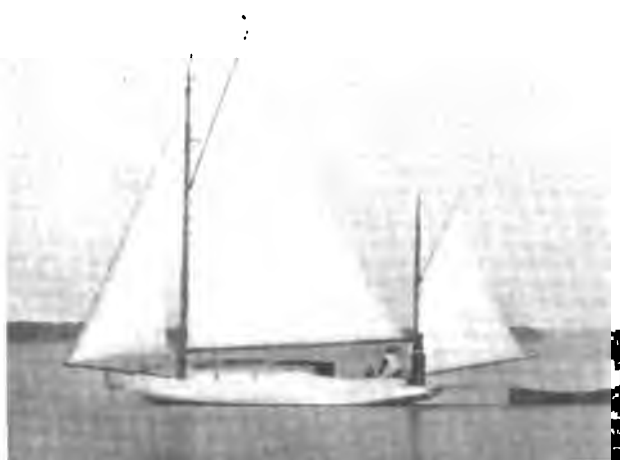


376

size and condition. A. J. McIntosh Yacht Agency, 32 Broadway, New York City.

* * *

No. 566—For Sale—New cabin speed launch, 36 ft. o. a., 6 ft. beam, 30 in. draught, designed by John Small, built by Graves, at Marblehead, August, 1910. Roomy cockpit with engine under



5255



566



4042

bridge deck at forward end, cabin with two transoms, lockers, etc. Toilet room forward. Finished in mahogany, large stowage space in stern, 40-h.p. Blount & Lovell engine, speed 16 miles an hour. Boat and engine guaranteed by owner to be in first-class condition. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

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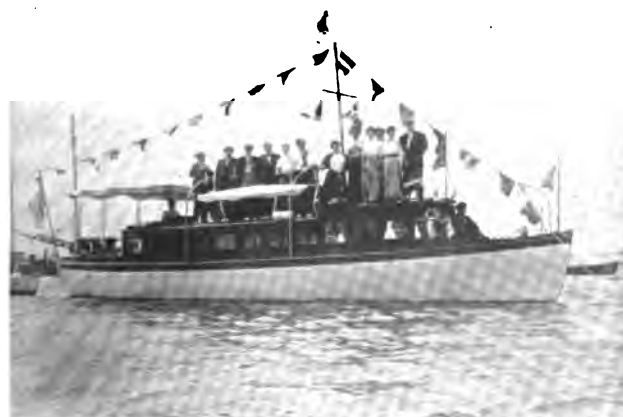
No. 4042—For Sale—Modern auxiliary sloop yacht designed by Ferris and built by Rice Bros. at East Boothbay, Me. 43 ft. 5 in. o. a., 30 ft. w. l., 12 ft. 6 in. beam, 7 ft. 3 in. draught. 11,500 lb ballast on keel. Full headroom in cabin, which has four berths, very large and comfortable, with pneumatic mattresses. Pipe berth in galley for captain. Fine folding lavatory, Ferro engine, 15-h.p., installed 1910. Bright deck in good condition, recalced a year; 80-gal. water tank under cabin floor. Complete outfit, including power tender 13 ft. 6 in. long with 2-h.p. Boothbay gasoline engine. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

For Sale—Auxiliary yawl, 33x25x11x3. Oak frame; cypress planked. Toilet. Good inventory. Sails and standing rigging in good condition. Will need new running rigging. 8-10-h.p., 2-cylinder, 2-cycle Springfield motor. Hauled out near Woods Hole. Price reasonable. Address A. B., 88 Fulton Street, Boston, Mass.

* * *

No. 762—For Sale—Beautifully modeled cruising launch, 45 ft. o. a., 42 ft. w. l., 10 ft. beam, 3 ft. 2 in. draught. Built by Murray & Tregurtha; launched 1906. Equipped with Murray & Tregurtha 4-cylinder, 25-h.p. gas engine. Accommodations: Forward cabin with two berths, main cabin with two



762



5411

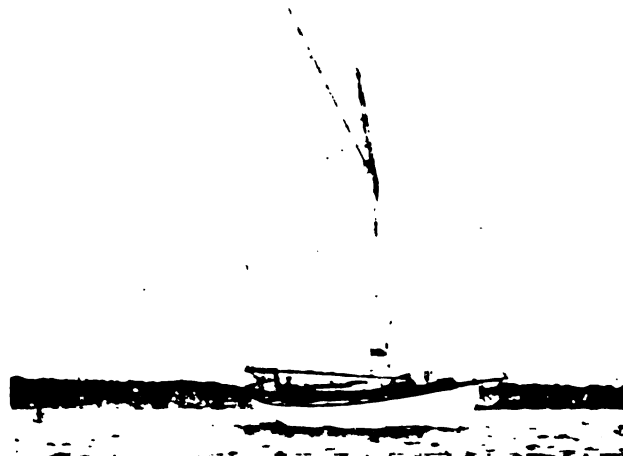
berths, engine room with one berth; also good galley with stove, refrigerator, etc. Toilet room off main cabin. Furnishings are of the best; hair cushions, mattresses, etc. Equipped with everything required by motor boat law. Inspectable Boston. For full particulars, price, address American Marine Brokerage Co., 100 Boylston Street, Boston, Mass.

* * *

No. 5411—For Sale—30x8.3x2.6-ft. trunk cabin launch, designed by E. B. Schock; built by day's work. Full headroom in cabin. Toilet, lavatory, running water, ice-box, electric lights, dynamo, switchboard, storage battery, cushions, blankets, dishes, cooking utensils, stove, chairs, anchor, chain, lights, compass, charts, flags, life-preservers. Engine 20-h.p. Ralaco, 4-cylinder, 4-cycle, 4x6. Cabin mahogany inside and out, paneled; shelves, clothes closet. Deck of quartered oak. Dinghy, round bottom, 12 ft. cedar and mahogany. Must be seen to be appreciated. Fine sea-boat. Speed 9 knots. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, N. Y. City.

* * *

No. 4055—For Sale—Cruising keel yawl, 36 ft. o. a., 25 ft. 8 in. w. l., 9 ft. 6 in. beam and 6 ft. draught. Very finely constructed, with 7,600 lb of lead on keel; water-tight cockpit, etc. Cabin is 12 ft. long and has 6 ft. headroom, finished in varnished oak. Four berths and two transoms in cabin, w. c., etc. Thoroughly equipped for cruising, awning, windlass, chain stopper, brass ventilator, lights, cushions, etc. Two water butts, capacity 90 gal., three anchors, one chain and two cables. Sails made by McClellan and L. A. Dunton. Inspectable in Maine. Price \$800. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



4055



4163

No. 4163—For Sale—Handsome, fast, cabin launch *Nellie*, 42 ft. o. a., 8 ft. beam, 2 ft. 8 in. draught, 6 ft. headroom, cabin 12 ft. long. Designed by Small Bros., Boston. Built by Graves, Marblehead, Mass. Just the boat for lake or river or outside cruising. Galley furnished with stove, copper sink, refrigerator, and cooking utensils. Large toilet room with Sands' closet and wash-bowl set in mahogany shelf. Exterior finish above sheer-line mahogany; interior, mahogany and white enamel. Red plush covered cushions and backs filled with all hair filling of best quality. Cork cushions in cockpit. Steers from cockpit or cabin. Nickel-plated brass railings, awnings, stanchions, windlass and deck fittings. Many convenient features that must be seen to be appreciated. Two 54-gal. heavy copper gasoline tanks and copper drip pans, 60-gal. water tank. 45-h.p. engine. In commission less than two months, therefore, practically new. Can be purchased at a very reasonable price, as owner has built smaller boat. Particulars, apply Henry T. Moody, Newburyport, Mass.

* * *

No. 4156—For Sale—A safe boat; Bonney whale-boat *John and Annie*, 31-ft. day cruiser, mahogany finish, large cockpit, small cabin. This boat is practically new. The power plant is a 15-h.p., 4-cycle, 2-cylinder Nichols kerosene engine. This is a perfect-running engine without noise, smell or vibration. Cost of fuel half that of any gasoline engine. This boat lies at 75th Street and Hudson River at May's Boat House, and will be shown by Mr. Bonney any day by previous appointment. Address John C. G. Bonney, 21 Platt Street, New York City.

* * *

No. 4056—For Sale—Keel cruising yawl, 38 ft. o. a., 28 ft. w. l., 9 ft. 6 in. beam and 6 ft. draught. 7,200 lb of lead on keel. Headroom in cabin 6 ft. 2 in. Two transoms in cabin and two pipe berths forward. W. c. in forward part of cabin.

Sails in excellent condition. Good cruising equipment, including tender, two anchors and two cables, brass side lights, riding light, two-burner Primus stove, spirit compass, large ice-chest.



4056

50-gal. water tank, good cushions, spinnaker, dishes and cooking utensils, etc. Very easy to handle, quick in stays, and a splendid sea-boat. Low price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



4156



4057

No. 4057—For Sale—Attractive 22-ft. sloop. Designed and built by Lawley at South Boston, Mass., in 1904. 38 ft. o. a., 22 ft. w. l., 8 ft. beam and 3 ft. 5 in. draught. Outside lead ballast with centerboard passing through it. Double-planked with cedar, and copper fastened. Cabin is 12 ft. long and has 5 ft. 4 in. headroom. Beautiful narrow strip deck and mahogany trimmings inside and out, cabin being richly furnished in all details. Three suits of sails, hollow spars, tender, best plough steel rigging, fine cushions, etc. Inspectable near Boston in a boathouse, carefully protected from the weather. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 1066—For Sale—Centerboard auxiliary cruising schooner yacht, 80 ft. o. a., 65 ft. w. l., 18 ft. 6 in. beam, 6 ft. 10 in. draught. 17 tons of lead ballast. Four staterooms, large saloon, comfortable crew's quarters. Carries two boats. Very economical to run. Unusually good sea-boat. 22-h.p. engine installed three years ago. 1907 she was entirely re-built. Has always had the best of care. Can be purchased very reasonably. For full particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York City.

* * *

No. 12372—For Sale—Cruising keel schooner, 43 ft. o. a., 36 ft. w. l., 12 ft. beam, 6 ft. draught. Three single bunks in cabin, two double bunks in stateroom, pipe berth in forecabin; 6 ft. headroom. Is equipped with anchors, chains, rode, cushions, blankets, binnacle, and full cruising inventory. This yacht is too large for use by present owner this season and will sell for cash at \$1,000. Stearns & McKay Co., Brokerage Dept., Marblehead, Mass. A large number of high-class yachts and launches for sale at low prices.

* * *

No. 4162—For Sale—This fine Cape Cod hunting cabin cruiser, 27x10.6x2.6. 10-h.p., 2-cylinder, 2-cycle Kennebec motor,



12372

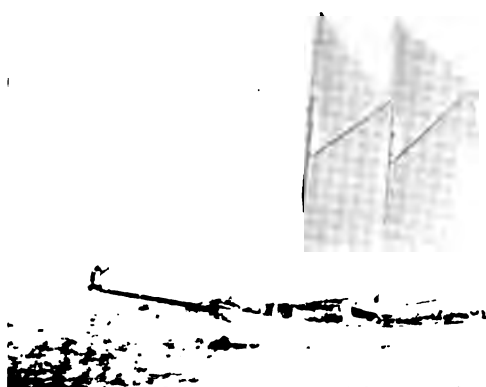
5-in. bore and 6-in. stroke, which drives her 9 miles an hour. Used one season. Sleeps four in cabin. Hair cushions, carpets,



4162

and all lights and all complete. Apply to Rae Bros., North Beach, L. I.

No. 4164—For Sale—Finest 50-ft. cruiser on the Great Lakes. New in 1908. In perfect condition and repair. Has cruised Georgian Bay waters three seasons. A perfect sea-boat for sale cheap. Owner getting larger boat. A. C. Wells, Menominee, Mich.



1066



4164



1412

No. 1412—For Sale—Handsome, raised deck cruiser, twin screw. In addition to the usual features in a boat of this type, she has low deckhouse, used as observation room, and fitted with auxiliary steering gear. Dimensions: 75 ft. o. a., 63 ft. 3 in. w. l., 15 ft. beam, draught 3 ft. 8 in.; launched 1909; has received best care and very little use. No expense spared to make boat strictly first-class in every respect. Large cruising outfit of best quality, including power tender. Crew's quarters forward, followed by machinery space, in which is installed two 6-cylinder Standard motors, 40-h.p. each. Aft engine space is large galley, followed by main saloon with extension transoms, buffet, etc., guests' stateroom with double berth, complete bathroom, and owner's stateroom with double berth and divan; mahogany finish. For price, plan and inspection permit, apply William Gardner, 1 Broadway, New York City. Telephone, 3585 Rector.

* * *

No. 1952—For Sale—Desirable and speedy cruising motor yacht. Lawley built. 78x71x11.2x4 ft. draught. Speed up to 17 miles. Interior attractively finished in mahogany and white. Headroom 6 ft. 6 in. Gasolene tank furthest forward, next aft of a steel bulkhead being toilet room, connecting with owner's stateroom which contains berth and extension transom, hanging locker, bureau, etc. Aft of this is main saloon having extension transom each side, back of which are lockers and alcoves; forward end are book shelves, after end tiled fireplace, buffet and lockers. Aft of saloon is galley and companionway to deck, followed by engine room, containing crew's quarters, etc. A guest's stateroom aft has berth, extension transom, etc., private toilet room and companionway to deck. There is a roomy bridge deck, and after deck is 13 ft. long. Engine is 6-cylinder Standard, 100 to 125-h.p., air starting and reversing. There is also a 3-h.p. engine for general service. Large gasolene capacity. Outfit includes launch, dinghy and complete cruising equipment. A very trim craft, built in the best possible manner and in first-class condition throughout. Very reasonable price. Price and further particulars from Gielow & Orr, 52 Broadway, New York City.

No. 4059—For Sale—Crack 21-ft. raceabout, 37 ft. o. a., 8 ft. 4 in. beam, 6 ft. draught. Built in best manner in 1908. Double planked with mahogany, with composition and copper fastenings throughout. Wilson and Silsby sails, 600 sq. ft. in area; hollow spars; 3,000 lb lead on keel; 8-ft. cockpit, water-tight



4059

bulkheads. Very fast and able. Won season's record for raceabout class in 1908. A splendid boat for any sailing, short cruising or racing, as she is easy to handle and stiff. Bargain. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



1952



11753

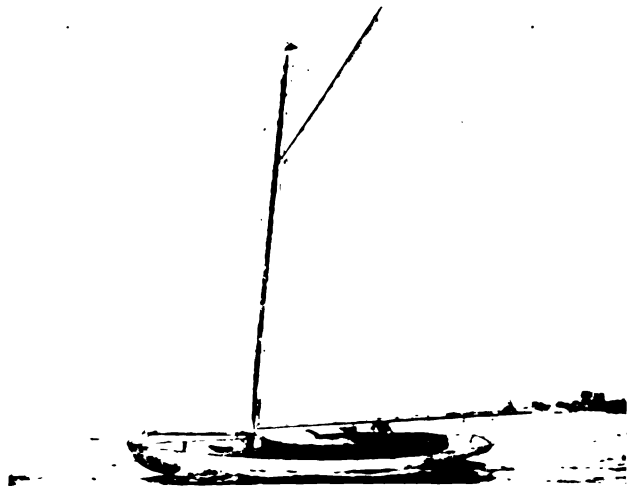
No. 11753—For Sale—25-ft. w. l. knockabout keel sloop, 40 ft. o. a., 8.5 ft. breadth, 6 ft. draught. 4,500 lb lead outside. Planked with Spanish cedar, copper fastened. 6 ft. headroom. Good-sized cabin with transoms on each side. One bunk in forecabin. Standing rigging new 1910; sails good. W. c. new 1910. Complete cruising inventory, cooking utensils, silverware, dishes, blankets, charts, cushions, pillows, etc. A fine cruising yacht and a great bargain. Price \$850. Stearns & McKay, Marblehead, Mass. * * *

No. 1554—For Sale—Cruising sloop, designed by Crowninshield, and built by Lawley at South Boston, Mass., in 1901; 56 ft. o. a., 35 ft. w. l., 12 ft. 4 in. beam, 8 ft. draught. Very best construction. Copper fastenings and oak frames. 14,000 lb lead ballast on keel. Two sets of sails; one, Wilson & Silsby, new 1908; one set, McLellan & Heald, Newport, new April, 1910. Large cabin and stateroom handsomely finished in mahogany and butternut, with 6 ft. 1 in. headroom. Curtains and cushions of English chintz; two toilets, one aft and one forward. Two berths in cabin and wide transoms. One berth in stateroom; three skylights, which afford ample ventilation; two copper water-tanks under cabin floor; capacity, 75 gal. each. Large galley; 6 ft. 1 in. headroom, with new coal range; also alcohol stove. Very large ice-chest newly lined; absolute complete cruising outfit of blankets, sheets, table linen, crockery and silver. New tender 1910 and new launch 1910. New running rigging. Full particulars and price on request. B. B. Crowninshield, 31 State Street, Boston, Mass. * * *

No. 4130—For Sale—21-ft. w. l. keel, cabin knockabout, built in 1901 and in fine condition, 33 ft. o. a., 7 ft. beam and 5 ft. draught. All outside ballast. Good headroom in cabin, cushions, etc. Can be seen in Marblehead. Lowest price \$550. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. Tel. Main 23.



1554



4130

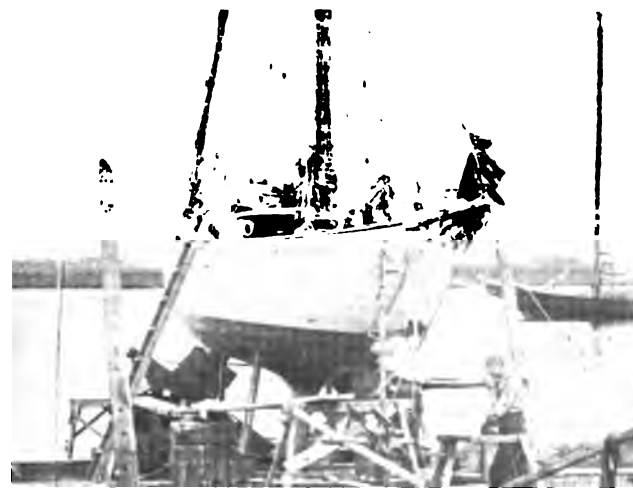
No. 4149—For Sale—31x8.6 ft., speed 9 miles, built by White, Marblehead, 1909. 18-h.p. Lamb motor, Bosch magneto. Launch has full headroom, sleeping accommodations four; w. c.; wash-



4149

basin; is an excellent sea-boat. Been around Cape Cod three or four times. Price low. Apply to Albert E. Eldridge, 30 Church Street, New York City. * * *

No. 4316—For Sale—Modern cruising sloop. Dimensions:



4316



940

51 ft. on deck, 33 ft. w. l., 12 ft. beam and $7\frac{1}{2}$ ft. draught. Built 1903. Ballast lead all outside. Accommodations include state-room and saloon with full headroom. Sails are good and yacht has been well kept up. Fast and able. Of good design and build. Further particulars from Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

* * *

No. 940—For Sale—At a bargain to close an estate, keel yawl about 40x25x9x4½, a good sailing craft, having Edson screw steerer and wheel, Sands' plumbing, brass blocks and cleats, 10-ft. round-bottom cedar dinghy, double Khotal stove, dishes, anchors and cables, awning, etc. Lead keel, worth alone about \$200. Boat will be sold complete for \$500 or smaller boat taken in part payment. Located near New York and can be seen at any time; free storage until Spring and will be painted. Further particulars from W. M. B., Rudder Publishing Co., 1 Hudson Street, New York City.

No. 4040—For Sale—Handy, cabin knockabout, length 29 ft. 6 in. o. a., 19 ft. 6 in. on water-line, beam 9 ft. 6 in., draught 2 ft. 8 in. In splendid condition. Cabin trunk, not shown in picture, added last Winter, giving roomy interior. 800 lb outside lead ballast, through which the centerboard drops. Very stiff. A great bargain. Inspectable near Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 3886—For Sale—Launch Coyote, 32 ft. in length, by 6 ft. 6 in. beam. 4-cycle Globe engine, 2-cylinder, 6-h.p. Speed 8 miles per hour with 24-in. propeller. Beautiful model boat, with standing wooden canopy. Is fully found, cushions of



3886

corduroy and pantasote; anchor, lanterns, life-preservers, charts, tools, etc. Tank 50 gal. Hull and engine in A-1 condition. Price \$750 cash. Apply W. C. Marshall, St. Lawrence River, Clayton, N. Y.

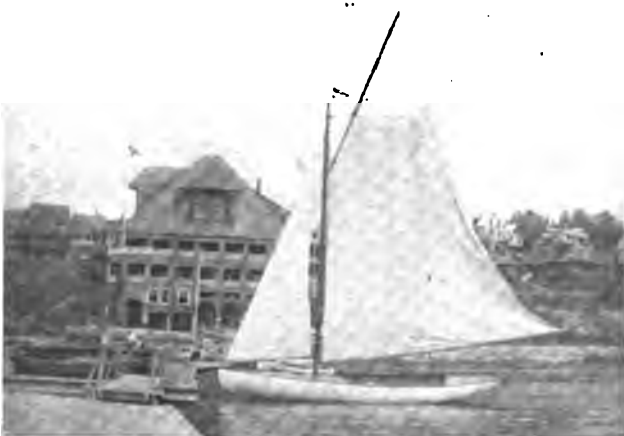
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No. 906—For Sale—Cruising keel auxiliary schooner yacht, 95 ft. o. a., 68 ft. w. l., 20.6 ft. beam, 10 ft. draught. Flush



906

deck. Ratsey sails, new 1909. Speed under power 8 miles; 75-h.p. Globe motor. Large accommodation. Bargain as owner



4040



4058



425

has purchased motor yacht. Apply to Cox & Stevens, 15 William Street, New York City.

No. 4058—For Sale—Crack centerboard, Hanley built sloop, 44 ft. 3 in. o. a., 30 ft. w. l., 13 ft. 11 in. beam, 3 ft. draught. A noted prize winner with scores of trophies to her credit. Two suits of sails made by Wilson & Silsby, one suit used one season only. All spars hollow. Large cabin sleeps four comfortably. Toilet, galley, etc. Beautifully built with bright deck. Copper fastened. Best of rigging and equipment. An opportunity seldom offered to buy a first-class light-draught sloop at an attractive figure. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass. (See photo on p. 254.)

No. 425—For Sale—Keel cabin knockabout, 34 ft. 6 in. o. a., 21 ft. l. w. l., 8 ft. beam, 5 ft. 6 in. draught, designed by Crowninshield, built by William B. Smith in 1902. Has cabin 8 ft. long with over 4 ft. headroom with transoms and lockers. Has been used for cruising and racing with great success. 3,500 lb outside lead. Sails in fine condition, full set of light sails, covers, etc. Hollow spars, two anchors, cables, compass, lights, lamps, cushions, stoves, etc. Can be purchased at a low figure. Apply to J. G. Alden, 27 Kilby Street, Boston, Mass.

No. 1731—For Sale—Herreshoff sloop, one of the well-known Buzzards Bay 30-footers, built at Bristol, R. I. 46½ ft. o. a., 30 ft. w. l., 5 ft. 4 in. draught. Double planking of cedar and yellow pine, brass and copper fastened. 10,000 lb lead on keel; large cockpit and four berths and toilet in cabin. Sails and standing rigging in fine condition, running rigging new 1910. Good inventory. Boat has always been kept in first-class condition. Price reasonable. Apply Gielow & Orr, 52 Broadway, New York City.

No. 4041—For Sale—Champion Aurora of the 18-ft. Knock-



4041

about Association of Massachusetts. Designed by Small Bros., and built in the best possible manner. Length 31 ft. o. a., 17 ft. 10 in. w. l., beam 7 ft. 6 in., draught 5 ft. 3 in. 2,000 lb lead outside. Wilson & Silsby sails, area 450 sq. ft. Merriman blocks. Won championships in 1907 and 1910, and got second place in 1908 and 1909. A splendid boat for day sailing. Very fast and easy to handle. Reasonable price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 4201—For Sale—Launch Roamer, built by the Yacht, Launch & Engine Co. of Morris Heights, New York City.



4201

Measures 40x8x2½ ft.; in first-class condition; furnished in mahogany throughout and equipped with a 10-h.p. Morris



1731



431



4036

Heights engine. Will sell very cheap as owner has no time to use her. Inquire of J. H. Gallagher, 100 Stewart Street, Providence, R. I.

No. 431—For Sale—Handsome motor cruiser, built 1909. 62 ft. o. a., 57 ft. w. l., 13 ft. beam, 3 ft. 6 in. draught. 40-h.p., 4-cycle engine, giving normal speed of 10 miles per hour. Dining room forward, two staterooms aft. 6 ft. 6 in. headroom in elaborately furnished cabin. Two toilets. Two tenders, one with power, carried on davits. Complete cruising inventory. Exceptionally able and seaworthy craft. Price very reasonable. For further particulars apply to Krogman & Purdy, 92 State Street, Boston, Mass. (See photo on p. 255.)

No. 4036—For Sale or Charter—Cruising ketch, exceptionally well built of best materials under inspection of owner in 1906. Length 40 ft., beam 14 ft., draught 4 ft. 6 in. (centerboard); 6 ft. 4 in. headroom. Built with idea of installing engine. Very able boat, having been built for heavy weather. Large cabin, galley, w. c., and forecabin. Four berths in cabin with two extra pipe berths, two bunks in forecabin. Sales and complete inventory in good condition. One man can handle her. Any offer will be considered. Inspectable at Quincy. Information and reasons for selling of A. K. Tylee, 41 Butler Road, Quincy, Mass.

No. 3290—For Sale—Keel sloop, 41 ft. o. a., 25 ft. w. l., 10 ft. beam, 6 ft. 3 in. draught. Designed by Crowninshield, built by Lawley. Is one of the handsomest and most comfortable cruisers of her size and is also fast. Won more races than any other boat in her class last season. Unusually roomy cabin and cockpit. Cabin is finished throughout in hand-carved mahogany.



3290



4189

has full headroom, extension transoms, buffet, clothes lockers and toilet room. Galley has large ice-box, stoves, dish lockers, running water. Bright decks, mahogany skylight, hatch, cockpit, etc. Cushions, carpets, dishes, cooking utensils, anchors, cables, etc. Inspectable near New York. Price reasonable. Address I. Deal, Care Rudder Publishing Co., 1 Hudson Street, New York City.

No. 4189—For Sale—\$1,800 will buy above raised deck cruiser, 35 ft. o. a., 8 ft. 6 in. beam, 2 ft. 6 in. draught. Complete, with complete cruising inventory. Mahogany coaming, all partitions and trim, companionway slide and doors, skylight and hatch. 4-cylinder, 4-cycle Palmer engine, special dynamo. Exide storage battery (100 amperes hour), voltmeter. Two seamless steel cylinder 45-gal. gasolene tanks, yoked together and set in tray in water-tight compartment, draining outboard. Gasolene feed pipe carefully installed. All parts of the steering gear quickly accessible. 40-gal. fresh-water tank under the raised deck aft. Abundance of storage room under raised deck. Watres air whistle. Galley in bow completely equipped. Directly aft is main cabin with full-length clothes locker and buffet. Sleeping accommodations for four; has slept six comfortably. Aft of cabin, engine room. Goblet-Dolan mahogany lavatory and toilet enclosed, separate compartment; ample locker space, including full-length oilskin locker and berth for man. Passage-way to cabin separated from engine by specially constructed removable mahogany partition. Mahogany binnacle with 5-in. card Bliss spirit compass. Clutch, spark, throttle and steering wheel controlled by one man. Lighted throughout by electricity. For further information see Jesse A. B. Smith, 241 Broadway, New York City.



4189



4195

No. 4195—For Sale—Very attractive single-handed yawl, 33 ft. o. a., 21 ft. w. l., 8 ft. 6 in. beam and 4 ft. draught. Wilson & Silsby sails in fine condition, 550 sq. ft. in area. 3,000 lb of outside ballast. Water-tight cockpit. Cabin 8 ft. long with 4 ft. 8 in. headroom. Two 12-ft. transoms. Full cruising inventory. Corduroy cushions, curtains, oars, boat hook, two-burner denatured alcohol stove, cooking utensils, new sail covers, new steel wire rigging, two anchors and cables, awning, etc. Practically ready to go overboard and \$25.00 would cover cost of putting in commission. Inspectable near Boston. Price \$600. Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

No. 4181—For Sale—Modern auxiliary sloop, 35x27x10.6x4.6 ft. Outside lead ballast; copper fastened. Built by Pollion. Bright decks, mahogany finish. 14-h.p. Palmer engine; speed 7 miles per hour. Good sails and covers, water tank, toilet, ice-box. Naphtha tanks heavy copper; all copper and brass connections. Fully equipped for cruising; light and heavy ground tackle; brass sailing lights, dishes, silverware, stove, etc. Plush, hair-filled cabin cushions; khaki, cork-filled cockpit cushions. Sleeps five comfortably. Pipe berth forward. Will sacrifice, owner desiring larger boat. Oliver E. Davis, 3025 Third Avenue, Bronx, or Rae's Boat House, North Beach, L. I.

No. 334—For Sale—High-grade power launch, 35 ft. o. a., 32 ft. w. l., 8 ft. 6 in. beam, 3 ft. 6 in. draught. With or without engine. Spray-hood over entire standing room. Compressed air whistle, cushions and regular equipment. Price very low. For further particulars apply to Krogman & Purdy, 92 State Street, Boston, Mass.

No. 113—For Sale—Keel raceabout, 35 ft. 5 in. o. a., 21 ft. l. w. l., 7 ft. 9 in. beam, 5 ft. 6 in. draught, designed by Crowninshield, and built by William B. Smith, of Quincy, in 1903.

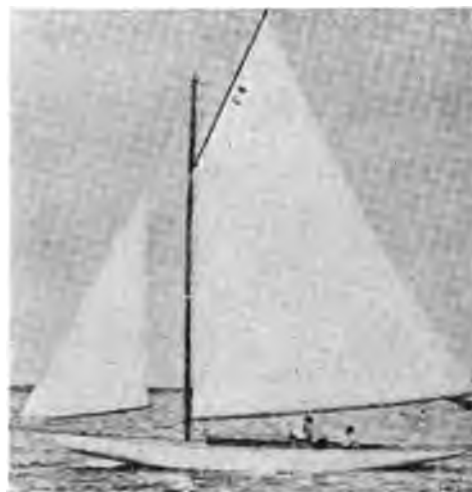


4181



334

3,500 lb of lead on keel; copper fastened. Small cabin with two transoms, roomy, water-tight cockpit, hollow spars, two sets of sails. Is a very fast sailer, especially in heavy weather. For



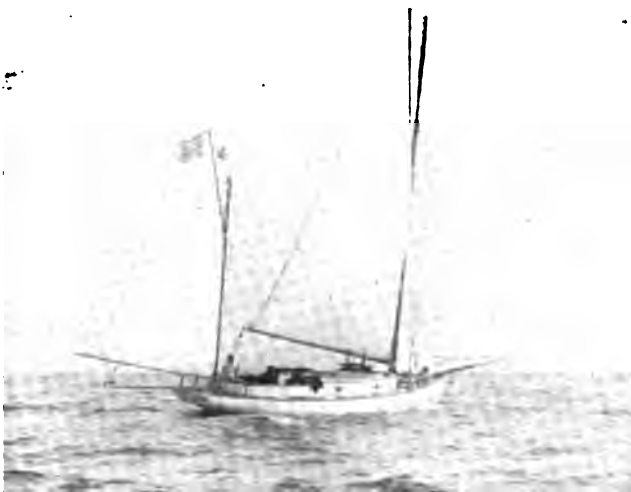
113

sale at a low figure. Location, Buzzards Bay. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

No. 561—For Sale—Open launch hull in perfect condition throughout, 35 ft. o. a., 6 ft. 6 in. beam, 2 ft. 6 in. draught, fitted



561



1100

for engine from 12 to 40-h.p. With 25-h.p. engine will make 16 miles an hour. Two spray-hoods; handsomely finished in mahogany. Designed by Binney, built by Fenton in 1909. Located near Boston. Apply to John G. Alden, 27 Kilby Street, Boston, Mass.

* * *

No. 1100—For Sale—Auxiliary cruising yawl, designed and built by Smith at New Bedford. 32 ft. o. a., 24 ft. w. l., 10 ft. 6 in. beam, 5 ft. draught. Good cabin with toilet. Sails made by Cousens & Pratt in 1909, in good condition. Equipped with Atlantic 8-h.p. motor. Speed 6 miles per hour. Tender, cushions, lights, etc. This boat can be purchased at a very low figure. Her yawl rig makes her easy to handle, and a very able cruiser. Bargain as owner cannot use yacht this year. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 666—For Sale—Gasolene launch built by Truscott. 35 ft. o. a., 32 ft. w. l., 8 ft. beam, 2 ft. 8 in. draught. Inspectable near Boston. Cabin has full headroom; toilet room and lavatory. Truscott 15-h.p. motor. This launch is built in the best manner throughout. She has mast and sail sufficient to give steerageway when needed. Very good inventory, including three anchors and cables, best corduroy cushions, air whistle, fog bell, etc. Gasolene tank under after deck. Control so arranged as to place boat and motor handling of one operator on bridge. Reason-



666



27814

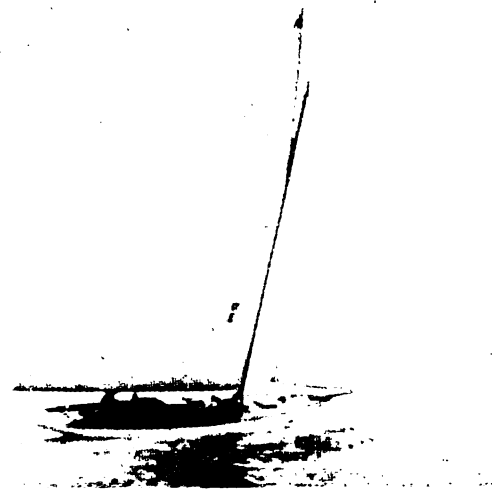
able price. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 27814—For Sale—Herreshoff sloop, one of the famous Bar Harbor Class, built at Bristol, R. I., in 1903; 49 ft. o. a., 31 ft. w. l., 10 ft. 5 in. beam, 7 ft. 3 in. draught. Built with the usual Herreshoff construction. Comfortable and airy cabin with four berths forward. Sails in excellent condition and boat is fully equipped throughout. Comfortable water-tight cockpit; handsome narrow strip deck; brass windlass; tender. This is an exceptionally fine sea-boat and makes an ideal fast cruiser as she is easy to handle and stiff and able. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

* * *

No. 3291—For Sale—One of the New York 30-footers in best possible condition. 43 ft. 6 in. o. a., 30 ft. w. l., 8 ft. 10 in. beam, 6 ft. 3 in. draught. Designed and built by Herreshoff. Mahogany trim, lead ballast, yellow pine planking, copper fastened. Four transom berths and two berths forward. Separate toilet room and galley, stoves, ice-box, etc. Three complete suits of sails, Ratsey, etc. Storm sails, light sails, etc. Round-bottom cedar tender. Fully found in every way for cruising. This boat has an excellent racing record in her class. Most desirable type of boat for racing and cruising. Can be seen near New York. Price reasonable. Address W. F. P., Care Rudder Publishing Co., 1 Hudson Street, New York City.



3291

IN THE TRACK OF THE TRADES

Lewis R. Freeman

PART IV

Fiji to Hawaii



GENERALLY speaking, the islands, both coral and volcanic, lying east of the 180th Meridian in the Pacific are almost perfectly healthy, while those to the west of it incline to the breeding of a number of more or less virulent forms of malarial fevers, a circumstance principally due to the fact that the eastern islands, as a rule, have better natural drainage and are more exposed to the full sweep

of the tradewind. The big island of Viti Levu, the seat of British government in Fiji, is not an exception to this rule. It is beautiful in spots, even attaining to real scenic grandeur among the high mountains of the interior; but its coast is a monotonous succession of intricate barrier reefs and mangrove swamps. Suva is, perhaps, the best location for a capital available under the circumstances, but the town in the hands of another nation than the British would be a fearful pest-hole. As it is, strict attention to drainage and sanitation has made it comparatively healthy, though to no such degree as any of the capitals east of the dividing meridian.

Socially, Suva is more developed than the French or German island capitals, and one dropping in for afternoon tea at the Fiji Club or Government House might easily imagine himself in Capetown, Hong-kong, Colombo, or one of a dozen other outposts of the British Empire. The Briton's first move in colonization is to make his seat of government a bit of old England; and to say that he has succeeded in Suva means much, both as to the magnitude of the work accomplished, as well as to the attractiveness of the life there.

There is not much to please the eye about Suva harbor, but it is deep and safe, and the loss of shipping there in hurricanes rarely proves so complete as in Apia or Papeete. The gale through which Lurline had passed en voyage from Samoa destroyed several houses in the town and wrought great damage on the outlying plantations, but the loss in the harbor was limited to a few carelessly-moored native sloops piled up on the beach. Suva, both on land and water, is better prepared than the island ports to the east to

meet these heavy blows, nearly all the houses being strongly anchored with steel cables, while numerous securely anchored buoys in the bay give shipping a fairer chance to ride out the storms in safety.

They had told us in Samoa that Suva Bay was a shark's nest, and graphic verification was furnished on the morning following our arrival. It had been the custom of the men of the party in all the harbors we had visited up to this point, both in the North and South Pacific, to begin the day with a morning plunge over the rail, a practice which, though not recommended by the old residents, we had never deemed sufficiently dangerous to warrant denying ourselves the refreshing pleasure of. No one had been threatened by a shark and only three or four lurking black fins had been seen in the course of the voyage. So it was with no misgivings that the Weather Observer, drowsy with sleep, pulled on his suit the first morning in Suva and went over the rail in a cool, deep, eye-opening dive. Three or four seconds later the Commodore, who was about to follow suit, saw the diver come sputtering up through the water, gain the star-board gangway in a half-dozen frenzied overhand lunges, to come clambering aboard and collapse, speechless with fright, on a cockpit transom. Simultaneously, a great shaft of greenish white shot like a



Reefing Down on Lurline



Fiji Pilot-Boat Coming Off

meteor under the stern, and an instant later a chorus of excited yells broke out on the deck of Wanaka, the Union Steamship Company mailboat which had come in during the night and anchored just beyond us. The commotion was caused by the hooking on a line hanging from the steamer's stern of a huge tiger shark, a monster so heavy that it required lines from two steam winches to land its floundering twenty feet of length upon the deck.

The Weather Observer could never explain anything beyond the fact that, on approaching the surface, he suddenly became aware of a round greenish blur—lighter in color than the water—increasing in size at a prodigious rate, and forthwith, being seized with terror, got back on deck with the loss of as little time as possible. We have always supposed that the shark, balked in his rush for a bite of man, sought solace in bolting the hunk of salt beef on the end of Wanaka's line, as not five seconds elapsed between one event and the other. A sailor on the poop of Wanaka who was about to bawl a warning to the Commodore regarding the danger of bathing overside, followed the course of the shark from the stern of Lurline to the hook which brought it to grief. The rest of our bathing in Suva was done with the aid of a sailor and a water bucket.

H. M. S. Clio, Captain Wilkins, arrived in Suva during our stay and proved good company for Lurline. She was in the South Pacific on a sort of roving commission, the principal object of which appeared to be the blowing up of a troublesome rock whose location had not yet been definitely determined. Captain Wilkins challenged us to sail Clio's cutter against that of Lurline, and the race was contested on the 1st of July. Well handled by Victor and Gus, our boat secured a good lead on the run to the outer reef, but in the beat home, owing to the faulty adjustment of a detachable keel borrowed from Wilkins, made heavy leeway, lost all she had gained, and finished a poor second.

Sir H. M. Jackson, K.C.M.C., the Governor of Fiji, had left for his new post in Trinidad shortly before our arrival in Suva, the place being temporarily filled by the Chief Justice, Sir Charles Major, with whom we exchanged pleasant calls. Colonel Leslie Brown, the American Consular Agent, proved a most agreeable gentleman, as did also his partner, the Honor-

able Arthur Joske, to both of whom we were indebted for much kindness.

The Weather Observer spent most of his time in Fiji on a visit to Mbau, the ancient native capital, a guest of Roko Kandavu Levu. The trip by launch, horse and boat is quite an arduous one, but well worth the trouble, as this little island is one of the most picturesque and historic spots in the South Seas. It was in Mbau that the great cannibal king, Thakambau, made his headquarters. Thakambau's canoe, a huge double dugout 100 feet in length, its shattered sides protected from the ravages of the elements by a regularly renewed shed of palm leaves, is still religiously preserved at Mbau. It is this canoe that history records was launched over live human bodies as rollers, these having been secured on a special expedition sent out for that purpose to a neighboring island.

The men of Mbau, probably inspired by the example of their chief, Kandavu Levu, are very fond of outdoor sports, particularly cricket, boxing and shot putting. The shot used in these latter contests are old cannon balls thrown into the island by British gunboats in punishing the natives for eating a family of missionaries some time in the forties. The unlucky Weather Observer, after having had somewhat the best of the island's crack shot putters, could hardly, with good grace, refuse to meet a couple of its heavyweight boxers, the result being his return to the yacht with two black eyes, a bulbous nose and a split lip.

The Roko Kandavu Levu came over from Mbau and paid us a visit on the yacht shortly before we sailed. The Roko is a most engaging young fellow, and, as the lineal descendant of Thakambau, the most influential native in Fiji. He is a graduate of the University of Sydney, and in speech, manners, tastes, everything, in fact, but appearance, is thoroughly British. His yacht, a fine 40-foot sloop which he sails himself, is the fastest thing in the islands, and as a cricketer he ranks ahead of any Englishman on the Suva team. The Roko displayed great interest in our cruise, and expressed himself as determined to build



Fijian Dancers Who Performed for Lurline's Party at Suva

a staunch schooner and embark on a similar one as soon as opportunity offered.

The Fijians are less expert in the building and handling of boats than the Samoans. The craft most favored is of the catamaran type, consisting of two canoes joined by a platform, or occasionally, a single canoe with a platform built on the outrigger. These affairs, while comparatively seaworthy, are of little use for sailing and very difficult to paddle with any speed. The whaleboat, so common in Samoa, is rarely seen in Fiji. Most of the interisland voyages are undertaken in clumsy sloops, though occasional runs with the wind are successfully made with the matting-sailed catamarans.

At 5 p. m. on the 2d of July we weighed anchor and slipped from the quietness of Suva harbor out into a roustering East wind that was playing all manner of strange pranks with the placid sea we had come in through a week before. For steep, short seas and uncomfortable small-schooner weather nothing quite equals one of these reef-locked stretches of the Southwest Pacific with a good, stiff blow on. The ever-imminent bottom, constantly dragging on the waves, retards them below and lets them keep going above, producing seas something between ocean swells and lines of surf. Sailing with seas of this description coming anywhere forward of the beam is like tobogganing on an uncleared mountainside.

Hardly was the yacht clear of the harbor before we were forced to begin shortening canvas, and by eight o'clock double reefs had been tied in the mainsail and foresail and the bonnet taken out of the forestaysail. Even then she made bad weather of it. She would make a terrific leap skyward, almost standing on her rudder in an effort to clear an advancing wave, and then crash thunderingly down and bore her nose deep into the green water of the next wave before her bows began lifting again. There was not a great deal of weight behind the seas and they did little damage; but all night long they shook the yacht as a terrier does a rat, and carried away a wagonload of fresh fruit sent by our Fiji friends and made sleeping a physical impossibility. By morning a falling wind and sea made it possible to shake the reefs out of the foresail and put the bonnet back into the forestaysail, but the mainsail languished all day with the most of its length along the boom.

Early in the morning of the 4th the yacht crossed the 180th Meridian, carrying us back to West Longitude. Regarding the unusual sequence of days on this occasion the "Ladies' Log" has the following entry under date of July 3d:

"Yesterday it was Sunday, the 3d; to-day, from 12 p. m. to 4 a. m., it was the Fourth of July. Then we crossed the 180th Meridian and it was again Sunday, the 3d. To-morrow we will have a continuation of the Fourth, which we started this morning. This figures out at one and five-sixths Sundays and one and one-sixth Fourth of Julys, making a total of three complete and consecutive holidays on which, according to nautical custom, the cook must provide us with duff."

Levity of the "Ladies' Log" aside, the coincidence was a most remarkable one.

It was possibly the first fragment of the Fourth struggling to join forces with the unbroken one that

caused an hour's diversion on the morning of the latter which was quite sufficient in itself to stand for an Independence Day celebration. The wind had been light but steady from E.S.E. all day, and when darkness fell there was nothing in the smooth sea, clear sky and high barometer to point any reason for not carrying the light sails all night. An easy nine miles an hour was averaged all through the first watch, and a freshening of the breeze shortly after the sounding of midnight had ushered in the Fourth was responsible for better than ten miles run in the hour immediately following. Shortly after one o'clock the breeze, quite without warning, suddenly fell light, and all in a minute the celebration was on. What it was we managed to agree upon the next morning, and as to why it was, the coming day also brought considerable enlightenment; how it was depended largely upon one's viewpoint, and no two appear to have seen it in quite the same way.

With the startling distinctness with which the slightest sound above makes itself heard in the quiet spaces between decks, those in the cabins below heard



Type of Fijian Fishing Boat in Suva Harbor

the rustle of the seas along the sides die down as the breeze fell light, heard the banging of blocks, the flap of sails, the slatting of lines, and presently the buzz of voices in puzzled conjecture. Then a low, grinding roar, like the distant sound of a dry-snow avalanche, began filling the air, and instantly the sharp, incisive voice of the Commodore cut in, shouting an interminable string of orders. Suddenly the sound of the voices changed to gasping snarls, the boom of boots on the deck to rat-a-tats, and the whole of the outside Universe seemed to resolve itself into one huge roar. Then a great, big, solid something struck the yacht and all the staterooms laid down on their sides, the lamps swung up and laid down against the ceiling, and everything movable jumped out and laid down on the port berths and transoms. A trunk broke loose from its lashings under the cabin table and slid down to mingle with a typewriter, a phonograph, a couple of hundred of the latter's loose records, and, incidentally, a man. Shortly a starboard bookcase vomited its contents into the shambles, and a big bunch of flags of all nations, unrolling as it came, leaped out to lend a festal touch to the glad occasion.

And over all, through open skylight and companionway, poured floods of brine to keep down the dust.

Time and again the yacht struggled to sit up, and as often settled shudderingly back on its side. Finally, the muffled snarl of orders forced from a wind-stopped mouth cut down through the roar, to be followed by a scurrying on deck, tiny and distant like the scrambling of mice over paper, and the cabin suddenly leaped halfway up and hung there quivering as though balanced on its corner. Then, as some one ran forward the slide and jammed together the doors of the companionway, came the tense voice of the Commodore, gasping above the wind. "Tumble up lively, you there below! Come a-running and lend a hand 'fore the sticks go out o' 'er!" Then, more indistinctly as his face was turned, "Le' go, there forrard; le' go!" A moment later the cabin gave another jump back toward the normal, this time straightening up enough to permit the Weather Observer to burrow out from



Lurline at Anchor in the Harbor of Suva, Fiji

under a stack of phonograph records and make his way along the side of the port transom to the stairs.

Afterwards the Weather Observer told how his head had been bumped twice in gaining the deck; once against the storm doors and once against the wind. The air, which was rushing by as though all the atmosphere of the Universe was trying to crowd itself along the deck of the yacht, felt as tangible as a stream of water, and so mixed was it with water, in fact, that there was no telling where the surface of the sea left off and the air commenced. The hard-driven drops stung like sleet and the act of breathing with the face turned to windward was a sheer impossibility.

Still heeling heavily, and with mainsail dragging over her port side like the trailing wing of a wounded bird, the yacht scudded off before the wind. Withal she was making good weather of it, and even before

the coming of the rain marked the passing of the center of the squall we had the main-boom amidships and the troublesome mainsail hauled aboard. The deck was a fathom deep in flapping sails and up forward a water butt and a salt-beef barrel were having a lively game of tag, but neither of the boats had broken its lashings and none of the skylights was smashed. Most of the damage was done to the storm-tossed contents of the cabin. By daybreak the deck was cleared and the yacht, under all-plain sail, headed again on her northwesterly course.

Our "early morning celebration," as we afterwards had explained to us in Honolulu, was what is commonly referred to in the South Pacific as a "leeward squall." This phenomenon is met with only among volcanic islands high enough to allow the wind to draw around them and meet again in "twisters" a few miles to leeward. If the wind holds steady from one direction this ordinarily makes little trouble, but if it chances to haul two or three points ahead when a ship is passing a high island the squall which comes boring in from leeward may take her aback with disastrous results. Trading captains passing under the lee of an island of this description always go under shortened sail. Light sails of all kinds are unpopular in the South Pacific—one never sees a trading schooner with a topmast on the fore, and not all carry them on the main.

It was a "leeward squall" of unusual force that Lurline encountered on the morning of the Fourth of July, and considering the fact that, with the exception of her foretopsail, she was carrying all the sail she had, the Commodore's work in bringing her through unharmed was creditable in the extreme. From so unexpected a quarter did the squall appear that only the briefest space was allowed for preparation; yet in this time all hands were called, the maintopmast staysail and maingafftopsail were lowered to the deck, the jibtopsail and flying jib hauled down and furled, the ship put about on the other tack, the jib furled, and men stationed at the halyards fore and aft. All of this was accomplished before the squall struck, which then left nothing to do but let go the halyards when the force of the wind proved too great for the yacht to stand up under. The mainsail's falling in the water it was impossible to prevent with the wind coming as it was.

By the afternoon of the Fourth we were out of sight of the last of the Fijis and again dependent on observations for our position. It was our intention to call in at Fanning Island on the way to Hawaii, to which end the yacht was kept headed Northeast whenever possible, a course two points more easterly than one direct to Honolulu. With a light E.S.E. wind 119 miles was run to noon of the 5th, soon after which a shift to N.N.E. forced us to go about and head nearly due East all afternoon. Toward dark it fell calm and but three miles were run between six o'clock and midnight. By the 6th the wind was back to S.E., but blowing with little force, the run to noon of that day being 45 miles.

A strong westerly current began making itself felt about this time—Lat. 14° 06' South, and Long. 176° 04' West—which gradually worked more to the North as we approached the Line. On the 6th it set us 18 miles to the West; on the 7th, 20 miles to W.N.W.;



Sunset on the Equator

on the 8th, 18 miles to N.W., and on the next four days from 24 to 30 miles to N.N.W. This was considerably more of a current than the sailing directions indicate for those latitudes.

In the forenoon of the 7th the wind hauled to N.E., blowing strong from that direction until four in the afternoon, when, without abating in strength, it went back to East. Toward midnight a heavy squall struck the yacht, and while furling the jib a foot rope gave way under Bill, one of the mate's watch, and only a lucky grab at the bobstay saved him from being swept away. The yacht put her nose under a couple of feet of green water at the same instant Bill went down, giving him a fearful ducking; but the plucky fellow swung up to the bowsprit the moment it arose and finished his work without a murmur.

On the 8th, 9th and 10th the wind continued fresh but persisted in shifting back and forth in heavy rain-squalls between E. by S. and N.E., making it impossible to hold one course for more than an hour or two at a time. The runs for these days were 127, 125 and 126 miles, respectively. On the 9th and 10th we passed straight through the middle of the Union Group, but so far from any of the islands that their presence was indicated only by the sight of an occasional land bird. This group is composed only of low atolls which are but sparsely watered and thinly settled. On the 11th the sky was completely overcast, making observations impossible, and the day was one long succession of baffling winds and fierce rain-squalls. This succeeded to a dead calm, the yacht lying all night with the booms hauled amidships and the sails furled.

In the middle of the forenoon of the 12th the yacht sailed under a black cornucopia-shaped cloud which we had been watching for some time as it lay in wait across our path. As we ran into the misty tail, which hung so low as to seem almost dragging in the sea, a veritable deluge of water broke upon us. The downpour was so fierce as to threaten for a while to break in the skylights and flood the cabins. The water accumulated so fast on the deck that the scuppers could not carry it off, and when the rain was falling heaviest the water stood a foot deep in the cockpit. The cataclysm ceased as quickly as it had commenced, not by passing on like an ordinary squall,

but simply by exhausting its fount. By the time the air was clear of water the black cloud had drawn up into itself and disappeared.

After four more days of variable winds, at 4 a. m. on the 16th, we crossed the equator in Long. 163° 07'. The wind was fresh from E.N.E. and the air (82°) and the water (80°) were each a degree cooler than for several days. The evening was marked by an unusually brilliant sunset.

Neither our rate of progress to this point, nor the course we had traveled, were all that might have been desired. On the 12th we made but 40 miles and the three following days an average of about 140 miles each. The course approximated N.N.E., all of two points to the leeward of the direct track to Fanning Island.

To noon of the 17th there was a run of 161 miles, which placed us due East of Fanning Island and at a distance of 150 miles. The next 24 hours was spent in beating in short tacks against a wind which had settled itself contentedly to blow straight down our course. By noon of the 18th, having gained but 62 miles in the day's run, we gave up Fanning Island and slacked off sheets for Honolulu. Twelve hours later the wind, blowing half a gale, had hauled up to N.E., forcing us to close-reef mainsail and foresail and head off to N. by W.

Washington Island, lying in about Lat. 5° North, and Long. 160° West, the only land we sighted between Fiji and Hawaii, was on the western horizon for several hours of the 19th. The wind was still as fitful as South of the equator. By keeping the yacht close-hauled all the time we usually managed to hold her on the right side of N. by E., the course to Honolulu, but it was a rough, slap-bang, ding-dong task. Of this period the "Ladies' Log," under date of July 20th, records as follows:



Moonlight in the Tropics. Taken From Inside the Cabin, Looking Out of the Companionway

"Lurline might have been mistaken for a coral island last night, so thick were the reefs upon her. 'The sea is going down,' cries the Commodore cheerily early in the evening. 'Ay,' answers the mate. 'Most of it is going down into the galley.' And sure enough it was. Contrary winds are forcing us to make considerable westing and the heavy sea cuts down our speed, the main element of linear progression. Reefs were shaken out at eight this morning and tied in again at seven this evening, the constant succession of one to the other during the last few days eliciting the suggestion from the mate that the reefs had best be padlocked and the key thrown away."

Most of the following week was spent in reefing and unreefing and tacking this way and that at the caprice of the wind. The sea was heavy most of the time and the progress slow, the best days' runs being those of the 23d and 24th, when 147 and 142 miles, respectively, were made. On none of the other days was there a run of over 100 miles, and on the 21st only 51 was marked up. On the 27th, though 150 miles west of the high island of Hawaii, we cut into the tip of the windless triangle which lies under the lee of its 13,000-foot peaks and for several hours floated without steerageway. When we got the wind again in the afternoon it was at once noticed that the log was acting in an eccentric manner, and on investigation its blades were found to be bent and twisted and heavily scarred, apparently by the teeth of some large fish.

At four o'clock on the afternoon of the 28th the green peaks of Oahu were sighted on the weather bow, distant 65 miles. With a light East wind the yacht averaged between four and five knots during the night and at 4 a. m. was six miles off the Barber Point Light, which bore N. $\frac{1}{4}$ W. This was some miles to the leeward of Honolulu and four hours of hard beating were necessary to take us off the entrance. Here we were boarded by the pilot at eight o'clock, and a few minutes later the tug, Fearless, despatched through the courtesy of the Spreckels Company, passed a line to the yacht and towed her in. We anchored in Rotten Row with mooring lines made fast to the identical old man-of-war boilers from which they had been cast loose on our departure for the Marquesas, four months previously.

From a sailing standpoint this run was the most unsatisfactory of the voyage. Twenty-seven days were required to cover 3,000 miles, an average of but little over 100 miles a day. Practically all of this time the yacht was close-hauled, and a total of at least three days was spent in tiresome beating against a wind that blew straight from our destination. It is possible that two or three days might have been saved had we made a fair wind of the Southeast Trades instead of keeping close-hauled in an endeavor to make Fanning Island; but this is by no means certain as the easting gained at this time stood us in good stead when the Northeast Trades were encountered.

(To be Continued.)



The Stanley M. Seaman a Modern American Coasting Schooner

AN IMPROVED GASOLENE FUNNEL FOR POWER BOATS

THE writer has frequently noticed that a great many people will spend considerable money on power boats, engines and various other appliances, but when it comes to the important business of taking aboard gasoline, use some old, cheap funnel made either of tin or galvanized iron, either with or without a chamois to filter the fluid; and when it comes to taking gasoline aboard in considerable quantities, this takes quite a long time.

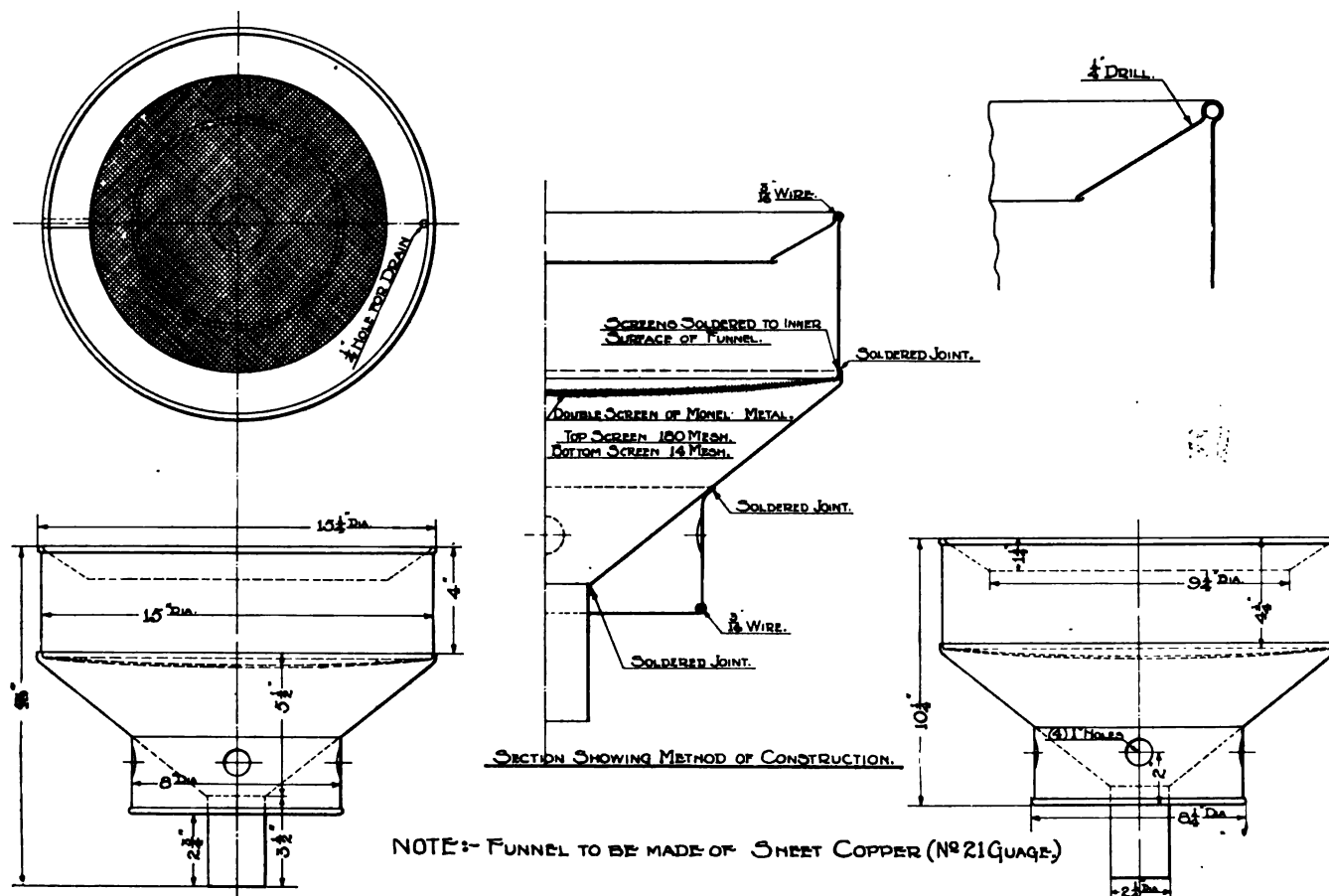
With this in view, the funnel, as shown by illustration, was designed. The main features of the design were suggested to me by a friend. The funnel, with sizes given, was made for an auxiliary schooner yacht, and has been in every way satisfactory. It will take gasoline as fast as it can be poured out of a 10-gallon can through the ordinary 3-inch mouth of the can, and takes out water as well as any other foreign matter, the funnel being designed to set solidly on the deck with the pipe entering the tank, so that no hands are required to steady it and it does not add weight to the top of the tank, so that gasoline may be readily taken aboard even in a seaway. The large holes drilled in the collar are to allow the air to escape with ease and thus permit the gasoline to flow rapidly.

The main feature of the funnel proper is the screening, which is double, the lower and coarse screen being used only to support the large area of very fine and

delicate screen which lays upon it. The upper screen removes water, dirt, etc., this being fine enough to catch water. As soon as water collects in quantities, the funnel is turned on its side and poured out of the $\frac{1}{4}$ -inch hole drilled in the edge of the anti-splash flange at the top of the funnel.

The writer has tried this funnel and has three of them in use, one of the size shown, another 12 inches in diameter for a power boat, and another 12 inches in diameter built with filling pipe offset for automobiles. It is surprising how gasoline can practically be dumped or thrown in this funnel without any splash, and at the same time the screening catches the water.

If it is desired to make this funnel cheaper, of course, it can be made of galvanized iron, with screen of brass or copper, but when made as per sketch it is substantial and practically noncorrosive. One hundred gallons of gasoline can readily be taken in with this funnel in three minutes. The material used for both screens is Monel metal, chosen because of its resistance to corrosion. Any one who has observed the condition of a funnel stored where it is occasionally wet by salt bilge water cannot fail to have observed how seriously the area of opening has been reduced by corrosion. The finer the mesh the quicker this stoppage becomes serious. One of my friends polished some of this metal and placed sheets of it on the dead-wood of his launch in April. In November when examined the polish still remained. The boat has been anchored as much as a month at a time in salt water.



Detail of Improved Gasoline Funnel and Strainer Devised by Charles Longstreth, Philadelphia, Pa.



HURRAH'S NEST

"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



BRITISH INTERNATIONAL TROPHY RULES

THE new rules governing the races for the British International Trophy as adopted by the Royal Motor Y. C. of Great Britain as trustees of the trophy and the Motor Boat Club of America as holders of the trophy, are as follows:

1. The races shall be run between June 1st and October 1st in each year. There shall be at least two races, and as many more as may be necessary until one country has won two races. The races shall be held from day to day except Sundays, unless a postponement is ordered by the international commission under rule 15. The country which first wins two races shall be adjudged the winner of the trophy. Not more than one race shall be held on one day unless with the consent of all the contestants given after the finish of the first race. If such consent be given a second race may be held on the same day.

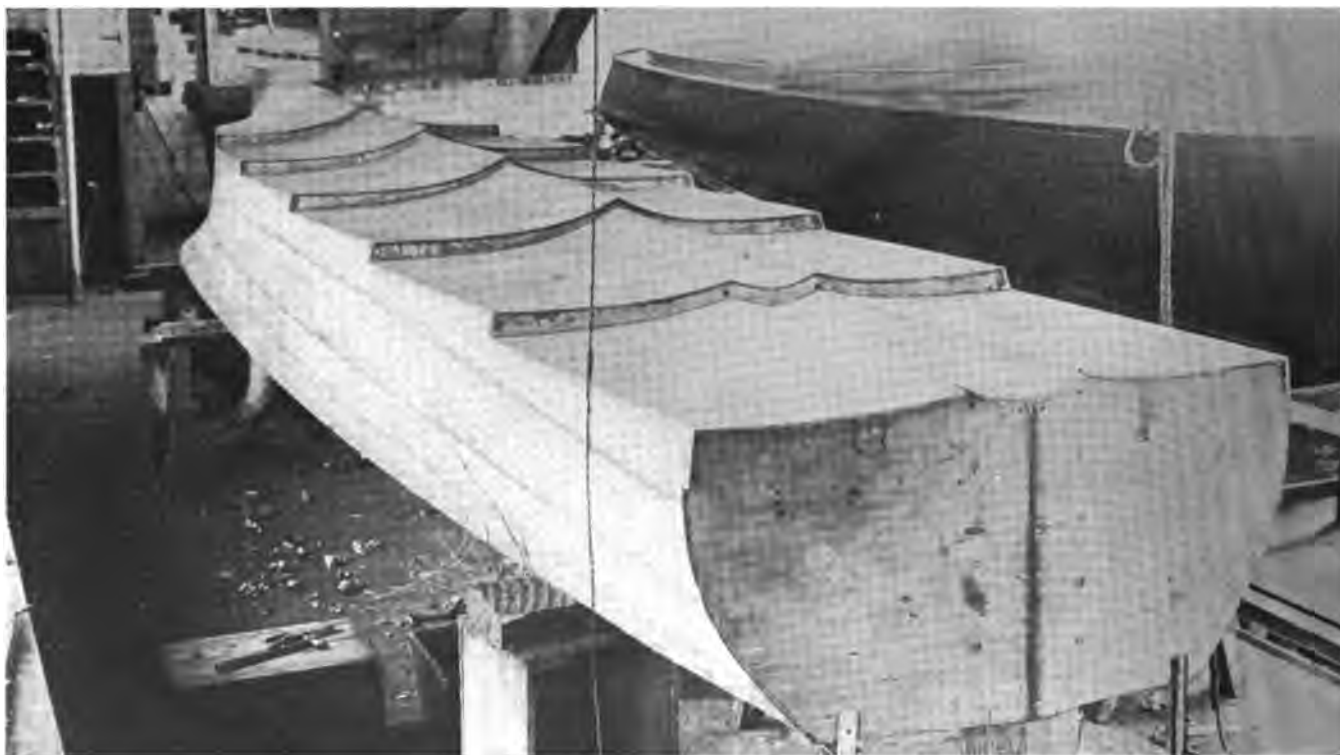
2. Any properly constituted motor yacht club, motor boat club, yacht club or automobile club shall be entitled to challenge for the trophy or enter a boat for its defense. All challengers and entries shall be forwarded to the recognized club of the country holding the trophy, and

in the case of a challenge the challenging club shall at the same time give notice to the recognized club of its own country. If the recognized club of a country shall receive notice of more than three challengers or three entries it shall hold such races or trials as it may consider necessary in order to select a team of three boats to represent its own country in the race.

3. In the event of no challenge having been received by the recognized club of the country holding the trophy on or before March 1st, no race shall take place during that year. In no case shall the races take place within five months of the receipt of the first challenge and no further challenges shall be accepted after May 1st in any year.

4. Not later than one month after the receipt of the first challenge the recognized club of the country holding the trophy shall give notice to all recognized clubs of the date and place of the races and not less than two months before the date of the races shall forward full particulars of the course to the recognized clubs of every country which has challenged for the trophy.

5. The races shall be over a suitable course in sheltered waters of the country holding the trophy, selected by the recognized club of that country, or failing that in similar waters in Great Britain or Ireland.



View of Fauber Hydroplane Upside Down

6. The length of the course shall not be less than twenty-five nor more than thirty-five nautical miles, and shall be arranged so as to avoid any angle in the course of less than 120 degrees, and there shall be a distance of at least 100 yards between any two marks. The length of each round shall not be less than five nor more than eight nautical miles.

7. The measurement and starting of the competing boats and the judging of the race shall be carried out by the international commission defined by condition 11 hereof, which shall also be the racing committee referred to in the racing rules of the A. I. Y. A. for the purpose of considering protests.

8. The trophy shall be handed to the club of the winning boat, except that where two boats belonging to different clubs of one country have each won one race the trophy shall be handed to the recognized club of that country, and the recognized club shall hold a further race to decide which club is entitled to the custody of the trophy. The trophy shall be held by such club for one year, or until the date of the next race, whichever shall be the shorter period, when it shall be returned to the recognized club of its country.

9. The club having possession of the trophy shall undertake the safe custody of it, and shall insure it for

£250, and shall pay the necessary premium. Such insurance shall cover not only loss by fire or theft, but any other loss or damage whatsoever.

10. The only limitation of the size of the competing boats shall be the over-all length of the hull, which shall not exceed 40 feet.

11. There shall be no restriction on the number, size or horse-power of the engine or motors, except that each boat taking part in any race shall contain and be fitted with such mechanical power as will drive her astern at a rate of speed not less than four knots in still water.

12. Each boat shall carry a distinguishing flag, which may be of any material, and shall not be less than 12 inches hoist nor 15 inches fly, and shall be carried at a height of not less than two feet clear of the deck.

12a. Each boat entered as one of a team representing any country must start in every race before the winning boat completes the course and must finish the course within three hours of the finish of the winning boat. Any boat failing to do so in any race will be ineligible to start in any succeeding race.

13. In the event of any temporary accident to or derangement of any one of the competing boats during the race, no assistance shall be rendered to the boat other than by the hands carried by the said boat. If the acci-



The Late Captain "Charlie" Barr, in Center, in a Characteristic Pose, Taken on Board the Schooner Westward. As a Racing Skipper "Charlie" Barr had an International Reputation Second to None



A Ravaud-Saunders Aero-Hydroplane, Equipped With Gnome Engine and Air Propeller. She was Born in England

dent or derangement is of such a nature that outside assistance shall be necessary, the distinguishing flag shall be hauled down and the boat shall take no further part in the races. Outside assistance may not be given or rendered or procured until the distinguishing flag has been hauled down, but after the same has been hauled down, assistance may be given, but the boat shall be immediately removed from the course and shall not interfere in any way with the other competitors.

14. In case of an accident to one of the competitors, the other competitors shall continue the race and finish the course. In the event of one competitor going to the assistance of another, the committee shall decide whether the race shall be run again.

15. If in the opinion of the international commission, constituted as provided in condition 10 of the deed of gift, a postponement of the race or an alteration of the course shall be desirable owing to unfavorable weather or any unforeseen cause, this commission shall have power to take such action as may be necessary, but in any case the course must conform to Nos. 5 and 6 of these rules.

16. Each boat competing for the trophy must carry at least two life buoys in a position ready for use.



View Taken Over the Stern of Pandora, a Nine-Ton Yawl, Cruising Around the World



A Question of the Right of Way on Long Island Sound

DELAWARE AND RARITAN CANAL

THE Pennsylvania Railroad Company announces that the Delaware and Raritan Canal is expected to be open for navigation at 7 a. m., on Wednesday, March 8, 1911.

GREAT LAKES CAR FERRY

I ENCLOSE you herewith a photo of my latest power boat. Note she is having a race with a horse and cutter, which may interest some of your readers. She is 378 feet long and 56 feet wide, and carries freight cars to the number of thirty-two across Lake Michigan, a distance of about 100 miles. She left Toledo, Ohio, where she was built, on the 1st of January, went up the lakes and rivers through ice most of the distance to Manistique and Frankfort, a total run of about 600 miles.

Detroit, Mich.

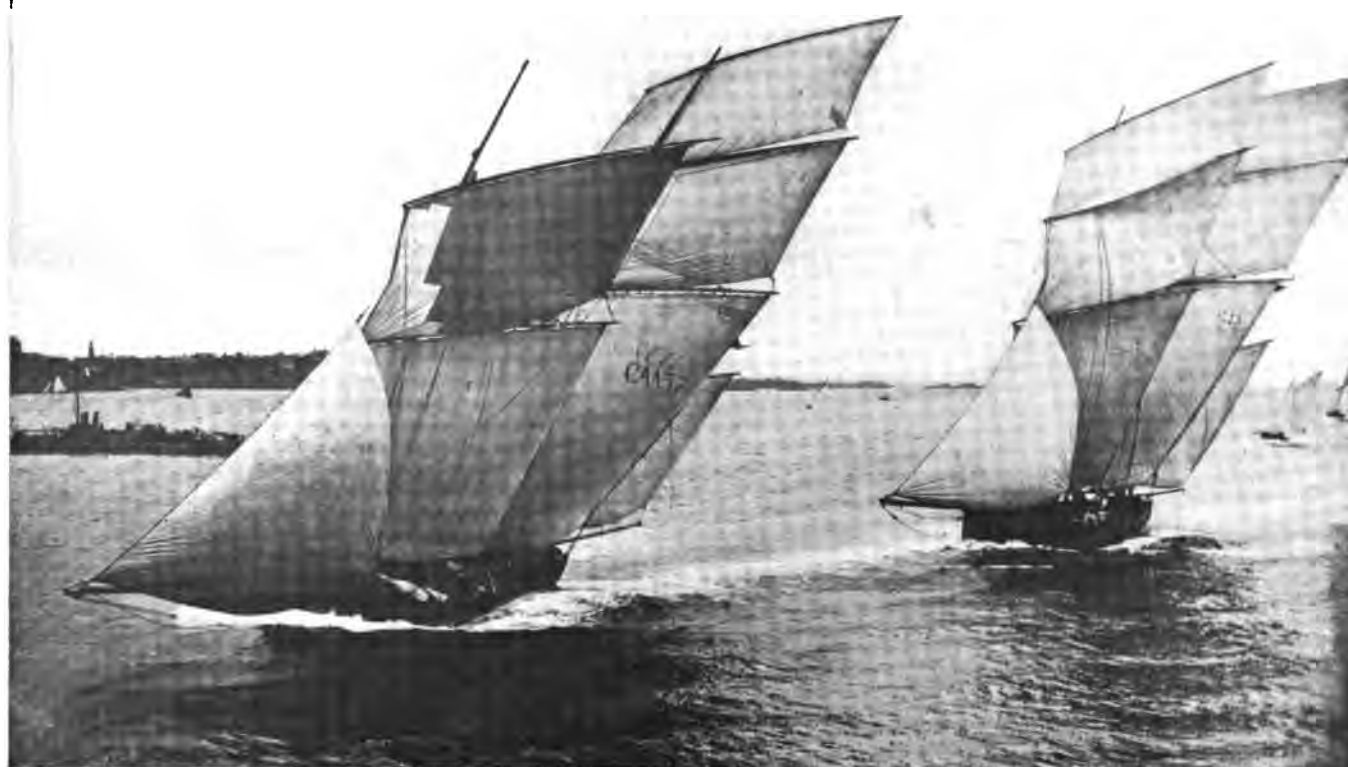
FRANK E. KIRBY.



Car Ferry Ann Arbor, the Largest in the World, Ploughing Through Two Feet of Ice on Lake St. Clair

FISHING BOATS OF THE BRITTANY COAST

THE strange-looking craft shown in the illustrations on the opposite page are fishing boats of the Brittany coast racing in the harbor of St. Malo, France. These boats are exceptional sea-boats, and face the Winter storms of the Channel and North Sea. The illustrations show the boats equipped with a second upper topsail which is used while racing but not carried ordinarily when engaged in commercial pursuits.



Photos by M. B. Perynet

Fishing Boats of the Brittany Coast



Former Method of Towing Barges and Lighters on the Canals and Rivers; This is Now Fast Disappearing With the Advent of the Gasolene Tugboats

WOLVERINE II

WITH the advent of the gasolene tugboat, the former method of towing barges as shown in the above illustration on the narrow canals and rivers of Belgium and Holland is fast disappearing. Some of the lighters are of considerable size, the one shown in the illustration in tow of Wolverine II is 80 meters long with a breadth of 9.7 meters and 2.65 meters draught.

This vessel, as shown in the illustration, had aboard 1,475 tons of coal, yet Wolverine II pulls her along at a speed of $3\frac{1}{2}$ miles per hour in smooth water, and frequently tows this particular barge on continuous runs of 12-hours' duration. This is a typical day for this craft, which on an average is used from 10 to 12 hours a day throughout the year.

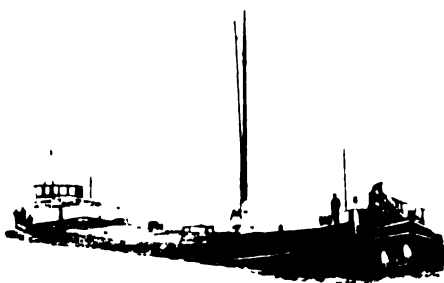
Wolverine II is 12 meters long, 3.2 meters in breadth, with a draught of 1.6 meters, the engine being

36-h.p. Wolverine. Wolverine is one of the three gasolene tugboats doing service in the Port of Gand, Belgium, and these boats frequently tow four barges at one time, which are loaded with an average of more than 1,000 tons of coal. The boats have given entire satisfaction and have created a demand for this type of tugboat.

QUEER SHIPPING OF TURBULENT TURKEY

THE recent revolution in the Turkish Empire lends interest to the accompanying photograph of one of the ferrymen of the interior towns.

The government of the caliph does not believe in building any more bridges than it absolutely must, and so, in many of the large-sized cities as well as the hamlets, primitive ferrymen ply their trade.



Gasolene Tug Wolverine II Towing Lighter—Such as Are Used on the River Rhine and on the Belgian and Dutch Canals



From Turkey

Many of these ferryboats are simple "dugouts," hollowed from the trunk of a tree, and with a plank or two across, as a seat. Usually, however, the single passenger taken at a time is content to stand.

More often, the ferryman transports wares over the river, for a pittance. At such times he stands boldly at one end of the craft, a clumsy pole in hand to guide the vessel; at the other end he will pile brushwood or whatever his cargo may be.

On top the freight always lies his pillow. Then, when the voyage is down-stream, he can lie full length, at his ease, and steer the craft while lying in that position—letting the river do the rest.

FELIX J. KOCH.



A SMALL NEW ZEALAND LAUNCH

THE picture shows a launch built by one of the stanch RUDDER men, Mr. William J. Bell, at Te Aroha, New Zealand. Mr. Bell says in his letter: "I have not seen any launch like mine, and she is different from all the boats about here. Her dimensions are 20 ft. over all and 6 ft. 6 in. width. I built her after working hours by lamplight, and almost single-handed, a small boy helping me occasionally. The boat will be fitted with an engine



A New Zealand Cruiser

purchased from one of your advertisers, but it is very slow arriving—I have been waiting now nearly three months."



LATONKA

LATONKA won THE RUDDER Cup in 1909 in the race held under the flag of the Eastern Y. R. Circuit of Lake Ontario on August 10th from Trenton to Glen Island, against a fleet of ten. She is owned by Lieutenant-Colonel Borden, and belongs to the Crescent Y. C. of Chaumont, N. Y.

She outsailed on actual time all other boats of her class and all others on corrected time. The race was held in a heavy Northwest wind and was a very hard one to sail, as the wind was blowing so strongly. She was captained by Mr. D. L. Borden, who has sailed her in many races and who captained her in all the races of



Latonka

the Lake Racing Association Meet at Cobourg in August of 1909. The crew were all members of the Crescent Y. C.

Latonka was built in the Winter of 1893 and is a good deal of a RUDDER production, as her basic model was that of Howard, whose lines appeared some time ago in this magazine. The lines were modified somewhat by increasing her length forward of the middle section by six inches and filling in all forward transverse sections a little so as to reduce any tendency to bury when driven hard. Also her stern overhang was built out 2 feet 6 inches, making her entire length 26 feet. A sloop rig was given her and a cabin added. Unlike most "improved" models, she has been a great success, being exceedingly able, a fine sea-boat, and reasonably fast, as her record shows. She was the first of the somewhat modern type of boat to be added to the Crescent Y. C. fleet and has been constantly raced since she was built. In fact, she has been entered in every race in which she

could possibly be entered, and with three exceptions has never failed to make third place or better. On one of these occasions she carried away her bowsprit early in the race and had to withdraw. She has been raced against everything and anything anywhere near her size as well as much larger boats, including boats rating in the P, Q, and R classes.

Taking all together she has quite a creditable record, as she has entered thirty-four races, has taken thirteen firsts, eleven seconds, seven thirds, two fourths and one breakdown.

In 1907 she won the Crescent Club Championship Cup for the third time and so secured it permanently, having previously won it in 1904 and in 1905. In 1908 she secured the Murray Cup for boats 21-foot racing length and under, having won it twice before in the years 1905 and 1906. The same year, 1908, she won for the third time the Gill Cup given for annual races in cruising trim from Chaumont to Henderson Harbor on Lake Ontario, 18 miles, against all entries.



DETROIT MOTOR BOAT CLUB

FROM *The Pilot*, the official organ of the Detroit Motor Boat Club, we reprint the following brief synopsis of the two-weeks' cruise for power craft to be held on the Great Lakes next Summer for the trophy given by Commodore William E. Scripps of the club.

"The run will extend over about two weeks, with an average run of about 80 or 90 miles a day. This will allow any good cruiser, even those that are moderately small, in length and power, to keep up with cruise.

"The test will be on the reliability of the power plant and mechanical equipment, combined with the skill of the skipper in keeping her moving over her required distance each day, with hitch or trouble of any kind.

"Each boat will carry an observer, who will keep his



One of the Many Charming Nooks in Bermuda

eagle eye on the lookout for repairs or the use of tools or extra parts, and when such things unavoidably occur, down goes a black mark against that boat. Neither speed nor distance will be extremely difficult, but you will be penalized for some small trouble or other.

"When the race is over, and the perfect scores registered, and the trophy awarded, it will be recognized that the winning boat has really achieved a noteworthy feat, and both craft and crew entitled to praise.

"The committee on rules are hard at work and we hope to be able to give more information in an early issue of *The Pilot*."

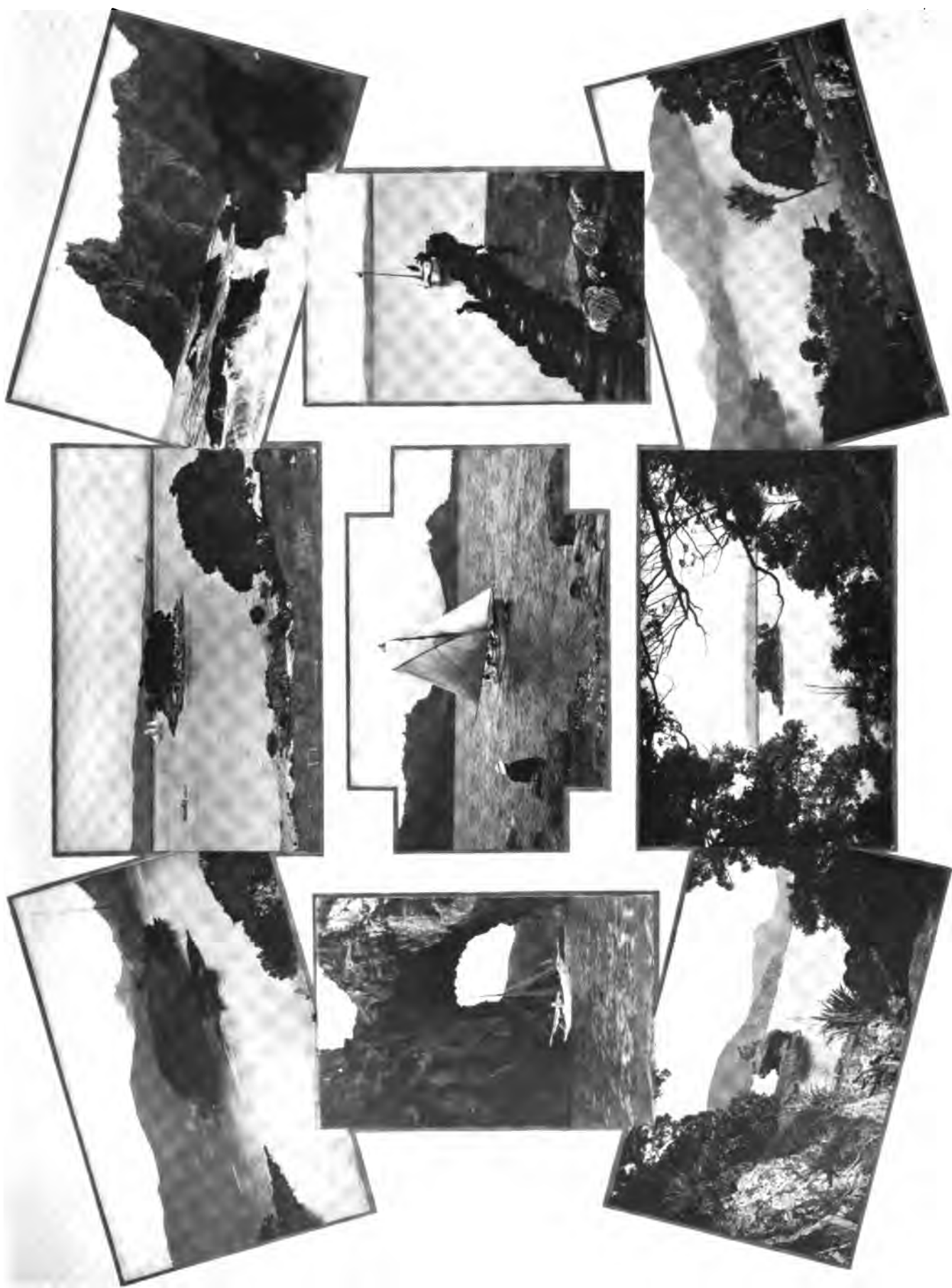


WHANGAREI BAY

NEW ZEALAND certainly possesses the most beautiful yachting waters the world can boast of, and of these Whangarei Bay is no mean example. This bay is situated on the east side of the North Island in latitude 36° 10', and the town of Whangarei lies upon its shores. We are indebted to one of our old readers, Mr. Norman Drummond, for the fine photographs shown in the illustration on the opposite page.



Launch of Vessel at Dunedin, New Zealand. Owned by R. S. Tonkinson. The Engine is a 25-H.P. Globe



Scenes on Whangarei Bay New Zealand

Photos by Mr. Normand Drummond

THE BOSTON POWER-BOAT SHOW

IF there is a locality in the country where one might expect to find good boats, and plenty, that place should be New England, with its boatshops on every point and cove; and if tradition holds good, the place of places to see those things should be Boston, and at the annual power-boat show. But the tomb-like Mechanics Hall at this year's exhibition never looked more tomb-like and boasted of but a very slim assortment of boats.

There were but two cabin boats in the entire show. One, a wholesome little cruiser of the dory type, which has been developed by the Toppan Company, and another from the land of furniture boats, the home of the "Prairie Schooner."

The exhibition this year was more interesting to the scientific person, who went equipped with a magnifying glass and micrometer, than to the man with the family looking for something in which he might take them out and enjoy the free air. It is well for the engine and accessory people to market their wares, and it is most interesting to examine and compare the various products, but the background of a boat show is boats, boats, boats, and without them, and without plenty of them, the boat show to many people becomes too much of a machinery exhibit. This much was admitted by some of the engine builders, and it would seem that if the boat-builders, excepting the builders of small stock boats, will not exhibit their wares, it might be a good idea for the engine builder to show his product installed in the boat. This has frequently been done at the New York shows, and provides the most interesting exhibit possible—the boat complete, showing exactly how the outfit will look, besides providing the necessary spectacular features of the show.

However, if the exhibition of boats, particularly the cabin boats, as a whole was disappointing, there were many individual exhibits that attracted the spectators, and practical persons seeking enlightenment. One offering in particular which attracted the writer was that of the Hyde Windlass Company's exhibit of propeller wheels. The finish, balance, and general appearance of these wheels would almost lead one to believe that each particular wheel was a special job, and not the least interesting feature was a stand or counter on which was shown a number of the wheels slowly revolving, providing for the observing person a silent but forceful object lesson of the value of efficient wheels.

Another carefully thought out demonstration was that of the Bosch Magneto Company, which firm exhibited their various ignition specialties on neat stands suitably connected to a turning mechanism by means of which the interested party was enabled to demonstrate to himself the various types of sparking apparatus.

As mentioned previously, while the cabin boat section of the show was very weak, there were several open launches which merit mention, one in particular a large, powerful, so-called dory about 30 feet over all exhibited by The Atlantic Company. Aside from the construction

and finish of this craft—she had several equally handsome younger sisters—there was every evidence of carefully thought out design and arrangement, and so far as the writer could discover the only connection between this craft and the dory type was in the name. Another well-proportioned launch was shown by the Rice Brothers Manufacturing Company. This little craft, about 20 feet over all, is finished in mahogany, and sells complete with a 4-h.p. engine and everything necessary in the way of equipment for something like \$275. Planned and executed by somebody who evidently had a large bump of proportion and common sense, this little boat was one of the most attractive propositions in the hall. This boat was stuck down in the cellar, and along with it was a craft which holds a most enviable record, and yet was passed by many with hardly more than a glance. The boat in question, Br'er Fox II, is owned by the gentlemen who manufacture the Fox engine, and one time, not so very long ago, she ran from Cincinnati to New Orleans, a spin of some 1,555 miles, in a little over 53 hours, actual running time, which, in the vernacular, is going some. The crowd neglected her somewhat, for her mooring was none too prominent; but knowing what these long-distance jaunts mean the writer stole down a few times and patted her gently on the forward overhang. Here was a chance, it would seem, to feature something real, but Br'er Fox II drew the cellar.

New England, codfish and dories are of course more or less synonymous terms, and true enough there were some fine examples of those sturdy packets, the dories. The Toppan Company showed many, and Mr. Toppan said that they were good boats. Knowing Mr. Toppan, I believe him, for he has been building dories since Hector was a pup. Some excellent dories were also shown by the Cape Cod Power Dory Company. One the writer noticed particularly was a craft about 22 feet over all, and, to be exact, 6 feet 3 inches wide, with the engine, a 5½-h.p. machine, located in a little stateroom or cuddy well aft. In wet weather the whole works can be bottled up and the rain and spray will fall on nobody but the guests. Aside from this valuable feature, the engine and equipment may be locked up when the craft is out of use. While on the subject of power dories, the writer confesses to not knowing when the dory ceases and when the launch begins. What is a power dory anyway?

An engine which looked substantial and which seemed able to stand any amount of criticism was shown by the Blount & Lovell Company, a firm of experience in the building of marine gasoline engines, but this, I believe, is the first time that they have shown their product as their own. One of the machines on view, a six-cylinder outfit of 5½-inch bore and 6½-inch stroke, is an excellent piece of work and will no doubt be heard from.

Practically all of the engines shown were of the regular stock types, the prominent builders having long ago given up the idea of springing anything radical. Walking around the show day after day I renewed ac-



Hyde Windlass Co., Bath, Me.



Chas. J. Jager Co., Boston, Mass.



Valentine & Company, New York



Buffalo Gasolene Motor Co., Buffalo, N. Y.



Lamb Engine Co., New York City



Gray Motor Co., Detroit, Michigan



Goblet-Dolan Co., New York



Cape Cod Power Dory Co. Wareham Mass.



A. S. Morse Co., Boston, Mass.



The Dean Mfg. Co., Newport, Ky.



The Mianus Motor Works, Mianus, Conn.



Standard Motor Con. Co., Jersey City, N. J.



Bath Marine Con. Co., Bath, Me.



Bosch Magneto Co. New York



Wilcox Crittenden & Co., Middletown, Conn.



The Eagle Company, Newark, N. J.



S. M. Jones, Toledo, Ohio



The Loew Mfg. Co., Cleveland, Ohio



Brown-Talbot Machinery Co., Salem, Mass.



Toppan Boat Mfg. Co., Boston, Mass.



Sterling Engine Co., Buffalo, N. Y.



The Stanley Company, Boston, Mass.



Camden Anchor-Rockland Mach. Co., Camden, Me.
Photos by Lebeck



Tuttle Motor Co., Canastota, N. Y.



Elbridge Engine Co., Rochester, N. Y.



Electric Goods Mfg. Co., Canton, Mass.



Essex Engine Co., Lynn, Mass.



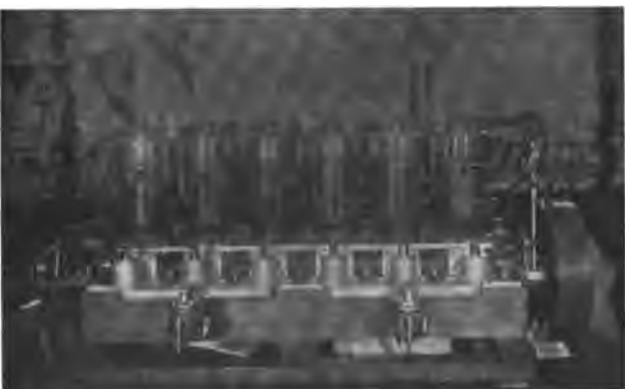
Wolverine Motor Works, Bridgeport, Conn.



H. L. F. Trebert, Rochester, N. Y



Blount & Lovell, Boston, Mass.



B. F. Brown Gas Engine Co., Schenectady, N. Y.



The Atlantic Co., Amesbury, Mass.

quaintance with lots of old friends, and to attempt to describe in detail the well-known rigs would mean cataloguing the whole show, a dreary proceeding at best; and who doesn't know all about Standards, and Sterlings, and Jagers, and Ralacos, and Eagles, and Wolverines, and Buffalos, and Lambs, and Loew-Victors, and the rest? We have come out of the stage of experiment, and the lack of uniform running on the part of any known marine gasolene engine to-day is half the time—no, nine times out of ten—the fault of the lunk-head who neglected the engine or neglected to turn on the gasolene.

One of the new ones which attracted attention was the Reynolds, shown by the Reynolds Motor Company, a new firm, which has on its directorate several men who have been identified with the internal-combustion engine building industry for years. This outfit employs a rotary valve instead of the common or garden variety of poppet valve, and is a most carefully worked out proposition. The valves, located in the heads of the cylinders, are composed of slotted horizontal disks rotated by a chain of helical gears keyed to the valve stems, providing a comparatively noiseless machine and one which, according to the test, shows a high efficiency. The original experimental engine was shown, with sections cut away to show the operation of the valve, and attracted considerable attention, especially from the scientifically inclined.

One of the most interesting of the accessory exhibits was that of the firm of A. S. Campbell & Company, manufacturers of electrical outfits. These people saved much breath and conveyed an intelligent idea of the value of

their goods by providing a small coop, which under the circumstances might be termed a yacht's cabin, inside of which were hooked up their various combinations. Once in the coop and the door closed, night reigned—turn a switch and bing! \$15 worth of radiance would illumine the gloom; another switch, and \$30 worth would blaze forth, and so on through the whole list. This was a clever little exhibit and filled the bill exactly, aside from the fact that the fittings were up-to-date and nautically possible.

The A. S. Morss Company, as usual, had on view a very complete line of every new fitting and accessory as well as their well-known specialties, all of which were most attractively displayed.

An interesting demonstration of the efficiency of their product under trying conditions was given by the Electric Goods Manufacturing Company, manufacturers of Perfex ignition outfits, which were shown in operation in, out, under and over water, and under all conditions did the outfit spark right merrily. A feature of this exhibit was an illuminated showcase, in which the whole construction of the Perfex "Rectified" Magneto was set forth in optical words of one syllable. It was evident, from the number of engines shown equipped with this make of ignition, that the system is appreciated.

Not the least interesting exhibit, from an educational standpoint, was that of the Goblet-Dolan Company, the only firm of its kind to exhibit. They showed a very complete line of their marine plumbing specialties and any one desiring information on the subject of sanitary marine equipment would do well to secure their booklet.



General View of the National Engine and Boat Manufacturers Association's Seventh Annual Exhibition at Madison Square Garden, New York

THE NEW YORK POWER-BOAT SHOW

THE seventh annual Exhibition of the National Association of Engine and Boat Manufacturers is just about getting in stride as we go to press with this issue, and from the class of exhibits on view, there is every evidence that the great popularity of power yachting is still on the increase, and increasing rapidly. Not many years ago the few exhibits of engines and boats were sandwiched in among the booths of the Sportsmen's Show and divided attention with the fly casters and Indian guides. Nowadays there are very few Indians and the fly casters could hardly contrive to make a cast from any point of the Garden during the show without hitting some engine manufacturer with an international reputation.

The New York Show is a good one from the spectacular point of view, since Madison Square Garden readily lends itself to an exhibition of this kind, and because in New York there are always many examples of the finished boat to hold the attention of the crowd. This year the boats and engines have been placed on the main floor, and the gallery is given up to the accessory and equipment firms. The whole Garden is comfortably filled this time, and it is pleasing to note that this year we are the third largest exhibition in point of investment of space, being beaten only by the Automobile Show and the Horse Show.

It is possible, owing to the late date, to record only impressions, and the impression created upon entering the main door is that something is "doing" this trip; in fact, the class of the exhibition is apparent before one has fairly entered the hall. On the opening day the place was fairly jammed and the impression gained, from a point aloft, was that the boats, crowded to the guards, were having a regatta on a sea of derby hats.

The Electric Launch Company, as usual, have their stand directly abreast the main entrance, and it is but natural for the spectator to have some curiosity as to what this firm has turned out this year to make good their own expression: "The last word in boat construction." They show several of their small speed and semi-speed boats, among them the little 20-footer Edith II, which very nearly cleaned up everything in her class last year, duplicates of which craft the firm guarantee to make 25 miles per hour with a 40-h.p. engine. The main part of the exhibit being of course the 1911 edition of the Elco-de-Luxe. This boat is so beautifully finished that it seems almost a shame to put her into the water. The boat is about 54 feet over all, with a breadth of 9 feet 3 inches, and differs from last year's model in that she has a raised deck forward instead of the usual turtle back. This deck is fitted with a long hatch or rather a skylight with a companion hatch on top, directly under which is located the six-cylinder, 60-h.p. Standard engine, which gives the boat a speed of 15 miles per hour. Aft of the raised deck portion comes a bridge deck, on which is located the steering wheel and engine controls; then the owner's quarters, which are beautifully and artistically upholstered in light blue, the entire finish being in paneled mahogany; aft of this cabin is located the owner's cockpit, fitted with wicker chairs and lazyback. The

boat sells for well over \$10,000, and looks to be worth every cent of it to the man who wants the best possible in this type of day cruiser.

Alongside of the Elco stand, is that of the Standard Motor Construction Company, which firm exhibits, besides their usual line of well-known engines, a 40-foot raised deck cruiser, completely equipped, and fitted with one of their four-cylinder, 16-20-h.p. engines. This craft is very similar to the boat exhibited by the same firm last year, except that she has a flush deck aft instead of a sunken cockpit. This firm is not in the boat-building business, and is deserving of much credit for putting this boat on view, as it is a valuable addition to the spectacular feature, and judging from the crowds pouring in and out of it, has considerable merit as an advertising feature. The trophy won by the Standard-engined Bernero in the Habana Race, the longest power-boat race on record, is shown in the Standard Company's booth and provides a silent, though forceful, argument as to the efficiency of these engines.

The Gas Engine & Power Co. and Charles L. Seabury Co. are again at their stand directly in the center of the Garden, and show several boats from their yards, of which a 45-foot cruiser and a 40-foot speed launch are the features. The cruising craft is finished in teak and is of a type which has been steadily developed by this company. She comes from a long line of cruisers, and is a worthy representative of her type. On her overall length of 45 feet she has a breadth of 10 feet 6 inches, and is equipped with a four-cylinder, 6 by 6 Speedway engine, located forward under the forward raised deck portion of the boat. The height of the raised deck extends well aft of the bridge deck, and overcomes the "broken-back" appearance, common to many of this class of boat. The boat is beautifully modeled, and will prove a fine sea-boat. The accommodations are excellent, consisting of the usual saloon and stateroom; but it is noteworthy that the craft is plentifully supplied with lockers of respectable size, and also that the bed in the stateroom is not of the shelf variety, but a good, substantial affair of comfortable aspect. The boats turned out by this firm are interesting in that practically everything that goes into the completed hull comes from their own shops, and that the purchase of their product is a guarantee of itself. Just alongside the cruiser described above, is the 40-foot speed craft, which, although she has the generous breadth of 6 feet, has a guaranteed speed of 34 miles per hour. She is constructed on the batten-seam system of construction, with mahogany planking, and her engine is an 8 by 8, six-cylinder Speedway. Though capable of a high speed, the boat has excellent accommodations, and with her high, wide and flaring bow, looks capable of driving through any ordinary sea in comfort and safety. Standing in this space, with a small card attached, on which is stated that the object is a six-cylinder, air-starting and reversing engine, is a huge machine of 300-h.p., which represents the latest and advanced features of gas engine practice, and shows in every line the influence of the fine machining and neatness of detail which have made the Seabury steam engines famous.



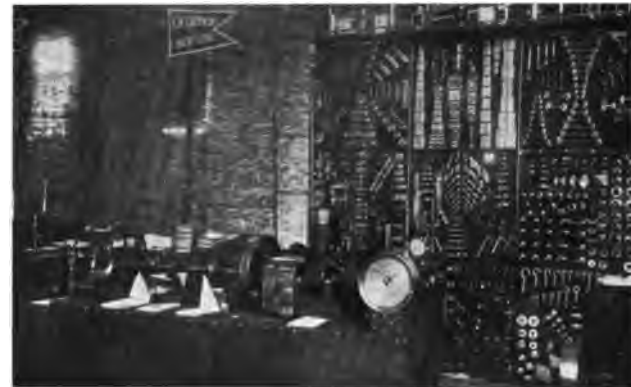
Gas Eng. & Pow. Co. and C. L. Seabury & Co. Cons., N. Y.



Wolverine Motor Works, Bridgeport, Conn.



Buffalo Gas. Motor Co., Buffalo, N. Y.



W. & J. Tiebout, New York



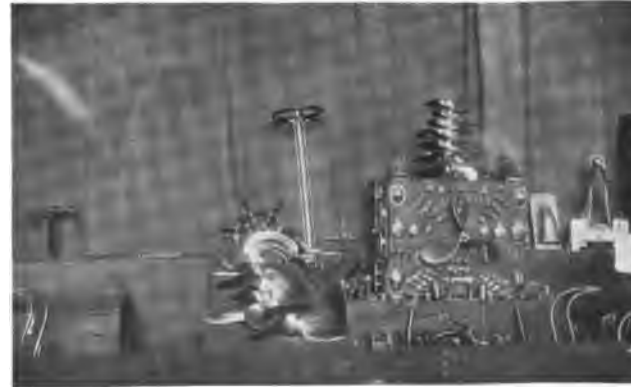
Electric Launch Co., Bayonne, N. J.



Edison Storage Battery Co., Orange, N. J.



The Snow & Petrelli Mfg. Co., New Haven, Conn.



Michigan Wheel Co., Grand Rapids, Mich.



Standard Motor Cons. Co., Jersey City, N. J.



67 Toppan Boat Mfg. Co., Boston, Mass.



F. W. Devoe & C. T. Reynolds Co., New York



Columbian Brass Foundry, Freeport, L. I.



B. F. Brown Gas Engine Co., Schenectady N. Y.



The Eagle Co., Newark, N. J.



Dayton Electrical Mfg. Co., Dayton, Ohio



Monarch Valve Co., Brooklyn N. Y.



The Vim Motor Co., Sandusky, Ohio



The Stanley Co., Boston, Mass.



Gasolene Engine Equipment Co., New York



The Royal Engine Co., Bridgeport, Conn.



The Loew Mfg. Co., Cleveland, Ohio



Sterling Engine Co., Buffalo, N. Y.



H. W. Ignition Co., Cleveland, Ohio



Regal Gasolene Engine Co., Coldwater, Mich.



S. M. Jones Co., Toledo, Ohio



Evans Stamping & Plating Co., Taunton, Mass



Stanley & Patterson, New York



Fay & Bowen, Geneva, N. Y.



Holmes Motor Co., West Mystic, Conn.



The Mianus Motor Works, Mianus, Conn.



Bosch Magneto Co., New York



Electric Goods Mfg. Co., Canton, Mass.

This year, besides filling the main floor and balcony, the exhibits overflow into the restaurant and refreshment parlors, which departments are forced into the basement, and the space thus preempted is crammed with boats. One of the most interesting of which is one of the latest model Government mahogany power lifeboats, equipped with a 40-h.p. Holmes engine. The boat is 36 feet over all, and it is stated that the craft was exhibited by permission of the Government as an educational feature, with a view of showing the interest of the service in the internal-combustion engine. The boat has a turtle-back deck fore and aft, and is equipped with spars and small sails for auxiliary purposes. The engine being located, and completely isolated, in the aft compartment, and wholly handled and controlled from the outside.

Just alongside of this exhibit is that of the Luders Marine Construction Company, and although they show but one boat, and that only 20 feet over all, it attracted considerable attention, inasmuch as it is a full-bodied, husky little ship which embodies in every line the influence of practical experience. The engine is a 5-h.p. Eagle, which the designer states will drive the boat at a speed of 7 miles per hour. Next to the Luders exhibit is the little Rice Brothers' boat, which attracted so much attention at the Boston Show, and across the aisle a little 16-footer, shown by The Atlantic Company. There are quite a number of cheap boats on exhibition, and some show exceptional value, but the little craft in question certainly meets the demand of a serviceable, sensible boat at a moderate price. Mr. Poyen of The Atlantic Company, who developed the well-known Gurnet dories, has spent considerable thought on this little craft, and the following brief description will show whether or not he has succeeded in turning out a real boat at a very low price. As stated above, the boat is 16 feet over all, and is of lap-streak construction, strongly and substantially built, and in model is of a sort of a dory-skiff combination. The engine is a two-stroke, three-port Atlantic of 2-h.p., and the outfit sells complete for \$175. Another boat in this part of the exhibition is a powerful-looking 40-footer, turned out by the Rice Engine Company, makers of the double-acting two-stroke Rice engine; and equipped with an eight-cylinder double-acting engine developing some 250-h.p. The representative in charge stated that the craft had attained a speed of 40 miles per hour, and if the engines all went at once, and the boat stayed right side up, it looked as if she might easily attain this speed.

An excellent little speed boat, 21 feet long and with a guaranteed speed of 18 miles per hour, is shown by the Reliance Company. This little boat is well built and is a development of a line of small racers which the company has turned out in the last few years, and which have made an enviable reputation. The little boat is offered as a small high-speed boat at a reasonable price. The machinery consists of a four-cylinder, $3\frac{3}{4}$ by 4 engine, and the outfit sells complete for less than \$1,000.

A substantial boat of the safe, comfortable, family type, at a reasonable price, is shown by the Fay & Bowen Company, which firm has a reputation of turning out successful boats of this type. The craft on view is 25 feet over all, and the company has been building and improving the same model for the past five years. The boat has a breadth of 5 feet, and is equipped with one of their double-cylinder, 10-h.p. engines, which gives the craft a speed of 11 miles per hour. The boat is entirely finished of mahogany, and is a handsome craft of the type.

Going from the boats to the engines, the most radical departure from common practice noticed in the limited time available, is an aluminum engine shown by the Gasolene Engine Equipment Company. This engine is a Smalley, built by the General Machinery Company, and was designed with a view to providing a light-weight machine which would retain the efficiency of its iron sisters. In exterior appearance the machine has the appearance of being made entirely of aluminum, and it is explained that the company, after much experiment, have successfully accomplished the feat of casting aluminum cylinders with cast-iron linings, the two metals being cast and indissolubly bound together. The claim is made that there is no lessening in efficiency, and a saving of about 50% in weight.

The general engine exhibit is very complete, among them being noticed the well-known Ralacos, distinguished for their symmetry of line and beauty of exterior finish, and bearing out, in appearance, the company's description of their product as being the "Silent simplified engine." The Jencick engine, known throughout the trade as a machine which is built of the very best material obtainable, is one of the machines noticed which has many admirers, and which machines show in every feature the influence of Mr. Jencick's long association with the automobile and high-speed marine engine.

In the Automatic booth is shown a model of a 50-footer, which they state is to be sent across the Atlantic Ocean to demonstrate the efficiency of their engine. The model is not particularly prepossessing, but the engine, a three-cylinder, $37\frac{1}{2}$ -h.p. machine, which has been chosen to propel the boat, is an excellent example of the simple, rugged, heavy-duty type, and as there are several long-distance races scheduled for this season, it will be interesting to note the performance of this craft.

Many of the well-known makes of the Western engines were on view. One, the Doman, being shown for the first time in New York. There are also the Regal engines with a full line, the Lambs, which are very popular about New York, and the Scripps, Buffalo, Loew-Victors, Vims, Grays, Fairbanks-Morse and others too well known to need description.

Among the accessories there are three excellent exhibits of propeller wheels; one by the Hyde Windlass Company, which is practically the same as that at the Boston Show; another by the Columbian Propeller Wheel Company, a feature of which exhibit is a two-blade aluminum propeller for aeroplanes; and the old and well-known firm, The Michigan Wheel Company, whose wheels are known throughout the length and breadth of the United States.

The largest exhibit in the accessory department of the exhibition is that of Durkee & Co., which, in fact, is an exhibition in itself, and occupies one entire end of the Garden from side to side. This is the largest exhibition of this nature ever made by a manufacturer, and about every conceivable sort of a fitting and accessory is shown, and with the large corps of attendants on hand, makes this exhibition one of the features of the show.

The electrical end of the industry is well represented by the Bosch, Richardson, Pfanstiehl, Perfex, and the K. W. Company, and also the Stanley & Patterson Company, which firm shows an assortment of their wireless dry battery ignition cases. These boxes are damp-proof and their use, it is claimed, prolongs the life of dry cells from 25 to 50%.



C. D. Durkee & Co., New York



Scripps Motor Co., Detroit, Mich.



Gray Motor Co., Detroit, Mich.



The Carlisle & Finch Co., Cincinnati, Ohio



Lamb Boat & Engine Co., Clinton, Iowa



Janney, Steinmetz & Co., Philadelphia, Pa.



Bridgeport Motor Co., Inc., Bridgeport, Conn.



H. C. Doman Co., Oshkosh, Wis.

THE OPEN CLASSES OF THE AMERICAN POWER-BOAT ASSOCIATION

Morris M. Whitaker

THOSE who have been actively interested in power-boat racing for the past few years have felt that for some reason the sport was not attaining the prominence it should or attracting the number of entries which the value of the prizes given should bring forward. The causes of this seeming lack of interest have been discussed and solutions sought.

When power-boat racing was in its infancy some six or seven years ago, a number of members of various yacht clubs got together to see if some basis could not be devised by which it would be possible to reconcile the many different types of boats owned by members of the different clubs, with a view to arriving at some form of handicapping which would place them on a fairly good basis of equality. These meetings culminated in the American Power Boat Association and through the efforts of Henry J. Gielow a formula for rating and handicapping was worked out. From time to time, due to changes in the general types of boats which were participating in the races and to constant improvements in engines, it became necessary to make slight revisions in the formula. As time went on the rule was perfected until to-day it is pretty generally conceded that it works out as well as could be expected of any empirical formula that could be devised. Of course, in getting out any formula, it is necessary to presuppose a given set of conditions or a given basis of performance which would be capable of being realized by a high average of boats built. Likewise there are bound to be instances of a superior combination of hull, engine and propeller, which give a higher efficiency than the average, and such a combination is bound to win and should win, because it is better than the average. Conversely, a poor combination of hull, engine and propeller would fall below the average and stand little chance of winning, with the consequent result that the owner thereof would blame the system of handicapping rather than consider that he could be at fault. In other words, "it is much easier to pick the mote out of his brother's eye than to look for one in his own."

As power boating and power-boat racing have increased, there has been a tendency among certain owners to fret under the Association's formula, claiming that it did not allow a fast boat to win, not realizing that the aim of the Association's rating was to produce an efficient boat rather than the fastest boat, the races under the formula naturally going to the boat of the highest efficiency. This has led to what is known as "Open Class" racing, dividing boats arbitrarily according to their over-all length, and racing them one against the other without any limit being placed upon the power installed. The result of this has been, as could be expected, that the owner capable of installing the largest power has stood the best chance of winning, because speed naturally follows upon power, other things being equal. So

long as boats of a given size are of approximately the same power, races between them produce good sport, but where this has been done to any great extent, the expected has happened. Some owner has gone a little bit beyond the average in power and has had a walk-over. The result has been that the other boats racing in the same waters lose their usefulness as soon as they are once decisively beaten, and as they are of little or no value aside from racing, they bring only a very small proportion of their original cost when thrown upon the market. To be sure, some of the more famous of the older boats have had their large engines removed and smaller ones fitted, being turned into runabouts, but their existence is ephemeral and there is very little satisfaction to the average man who would enjoy racing if it were upon a proper basis, because of the possibility of being outclassed even before his boat is launched, by some one who started later. This, I believe, is a statement of facts of speed-boat racing conditions as they are to-day. Races between cruisers on the other hand have been run off year after year under the Association's formula, with close results and fairly good satisfaction to the participants in these events.

There are one or two possible solutions of the difficulty, and in looking for these it was natural that the power-boat men should avail themselves of the experience of the older branch of marine sport—yachting—where the same difficulties had been encountered. The sailboat men had thoroughly tried out two expedients, the one-design class and the restricted class. One-design class racing presupposes that all boats in a class are identical in every respect and it is popularly supposed that racing between similar boats brings out and depends for success upon skill in navigation, but this is to a certain extent a fallacy, for while seamanship is a controlling factor in success, it is a well-known fact that no two boats, built as closely alike as it is possible to make them, will travel at the same speed. It is even more true of boats mechanically propelled, as has been shown by the experience of different governments, which have built a number of boats supposedly identical in every respect, but the trials of which show that they may vary in speed under the same conditions by as much as two or three knots.

Another feature to be considered in the one-design idea is that it does not permit more than one builder to do the work, as otherwise there might be a greater variation in boats built from the same plans. It does not give all an opportunity to compete and is not so good a thing for the sport as a whole as if many minds were brought to bear on the subject.

The other alternative, the restricted class, has also been tried among the yachtsmen and has been found to work out well when the restrictions were closely drawn and lived up to in the spirit as well as in the letter. These

restricted classes among yachtsmen have offered inducements to owners far beyond that of the one-design idea and have also tended to improve the general trend of design.

Some two or three years ago, the writer was asked to be one of a committee to draw up rules and regulations to govern certain restricted classes of power boats. This was done, but the interested parties had not sufficient coherence to bring the matter to a successful conclusion, and when the present officers of the American Power Boat Association were elected last February, they were instructed by the Association to draw up rules to govern what was intended to be limited or restricted classes. A committee was appointed to take this matter under advisement, and this committee made its report at the last meeting of the Association, recommending three classes, based upon over-all length 21, 26 and 32 feet, and intended to each, in its way, form a racing unit, to which an owner could build in accordance with his requirements and the amount of money he wished to invest. In considering the matter, the committee took up and considered the many different requirements likely to be met with and endeavored to thrash the matter out in a way that would be as simple and satisfactory to the average man as would be humanly possible. Possibly it would be of interest to describe briefly the way in which the conclusions of the committee were arrived at and then to describe the type of boat this limited class would cover, its utility and the type which it will foster.

The primary idea of the limited class is to so shape the conditions that the resulting boat will be of utility as well as furnishing sport in racing. The sporting side of racing does not primarily consist in high speed, because it is possible to have a more exciting race between two comparatively slow boats than two unevenly matched high speed boats, but at the same time a reasonable amount of speed is necessary to produce the interest both to the participant and the spectator. The committee therefore considered that a boat along the lines of what is now described as a high speed runabout would best

serve the purpose and proposed to model the conditions to produce such a boat. To bring boats of a type together, it is necessary to so model the restrictions as to insure their being fundamentally the same, but at the same time a certain amount of latitude must be allowed for ingenuity in design. Speed depends primarily, aside from the question of form, on weight and power, and two boats propelled by identical engines, but having different weights of hull, would give an advantage to the lighter hull, presupposing equally good design. Therefore, unless hull weight were restricted, there would be a tendency to strive for a victory through cutting this factor. It would be possible to draw up a set of regulations covering different scantlings and materials of the different constituent parts of the hull, but this in itself would be an unduly severe limitation as it would tend toward crystallization and would not give latitude for individual ideas and effort.

From the same cause, there would also be a tendency toward the use of the lightest of engines, and it would not be feasible to draw up detailed specifications covering engines of different sizes and types. Therefore, it was thought best to insert one provision in the conditions which would at once put at rest any attempt at weight cutting. This provision is that the minimum weight of the boats in running condition must be a given figure for each size: 1,600 lb for the 21-foot class; 2,200 lb for the 26-foot class, and 2,900 lb for the 32-foot class. The weights fixed are not unduly heavy or very light. They are a happy medium required for the construction of reasonably strong hulls and engines of sufficient strength to insure their lasting qualities. The rules of these classes require that the boats shall be weighed in running trim, that is with fuel and supplies aboard, without the crew, and that they must come up to the weight called for by the restriction or else carry ballast to bring them to the required weight. When floating in the water at the required weight, the water-line must be marked on each bow, at the stern and on each side amidship, with a mark which cannot be altered. The restrictions also



Photo by Beken & Son

An English Flyer, Mrs. Edgar Thornton's Racing Hydroplane, Columbine

require that the freeboard at bow and stern, when floating at the required draught, shall be also stated in the measurer's certificate so that this may be checked up, and a boat with such a certificate may race at any club providing races for these classes.

The weight in running trim having been fixed, it is necessary to fix the factor of power and this can be best and most simply accomplished by fixing the maximum cylinder volume allowed for each class, for in finality power is dependent upon cylinder volume and revolutions and the natural limitations of propeller design fix the maximum which can be employed to advantage, for I believe it is readily conceded that an undue increase in revolutions militates against itself by a reduced propeller efficiency, so that there is no corresponding increase in speed. The requirements for these classes also stipulate that the propeller shaft shall turn at the same number of revolutions as the engine when running ahead, and the boats running in these classes must be fitted so as to be propelled astern at least 4 miles per hour. The fixing of cylinder volume or maximum power allowed in this way simplifies the conditions greatly, as it is to be supposed that any owner building to a given class would use an engine of close on to the maximum allowed volume, as otherwise he would be handicapping himself and cutting down his own chances of success.

The restrictions take no account of proportions of bore to stroke and thus allow a wide latitude of choice in this feature and the possibility of using engines of many different manufacturers. The result of this provision tends to put a premium upon engine efficiency and does not limit the availability of engines to those of one manufacturer, as would be the case if a one-design class were inaugurated.

The cylinder volumes fixed for four-stroke engines are for the 21-foot class 225 cubic inches; for the 26-foot class 395 cubic inches; and for the 32-foot class 570 cubic inches. These cylinder volumes may be used either in engines of one, two, three, four or six cylinders, so long as the total volume of the cylinders of the engine does not exceed the prescribed limit which is fixed for four-stroke engines. Two-stroke engines being admittedly more powerful per unit of cylinder volume than four-stroke, are not allowed under the rules as much volume as the four-stroke, the regulations fixing the cylinder volume of two-stroke engines at 70% of that allowed for four-stroke engines. This figure has, by a number of

tests, been determined upon as a fair relating of one type to the other, but it is to be expected that a good four-stroke engine will give better results than a poor two-stroke machine or vice versa.

Summing up the restrictions of the classes, they consist simply in limiting over-all length to a maximum figure, limiting cylinder volume to a maximum figure and limiting the minimum weight, so as to bring the boats as closely as possible to a common basis. These restrictions are, I believe, the simplest that could be devised for the purpose intended. It is not to be expected, however, that when first tried out, a dozen different boats will finish in a race bow to bow, and a close race in these restricted classes will only be arrived at after considerable experimentation and gradual improvement. It is hoped by the Association that members of its constituent clubs who contemplate building boats approaching in size the restricted classes provided for, will modify their requirements in so far as is necessary to bring the boat desired within the restrictions of some one of these classes, so that each club may eventually have a fleet of sufficient size to make good racing. It would be as easy for an owner who intended to build a 33 or a 34-foot runabout, to cut off an amount of length necessary to bring it within the length restriction, or to limit his power as called for by the rules, as it would be to build just outside the class, and it is hoped by the officers of the Association that within a few years enough boats will have been built to permit of interclub events for sectional championships, and if sufficient interest is created to even carry the racing into National championships.

Now in regard to boats already built, these, with probably slight alterations here and there, could be brought within the class limits and some might even already conform by the addition of a certain amount of ballast. It is not to be expected that these classes will spring into immediate popularity, but in making rules to cover the limited classes, the Association aims to provide more for the future than for the immediate present, as the boats which should be produced under these restrictions will be of a healthy, useful type which an owner can use for several seasons without being outbuilt, and which will stimulate an effort toward refinement and efficiency, for these will be the factors which will, most of all, make for success in racing in these classes, as well as in any other form of racing.



Joysoe, 40 Ft. O. A. Sterling Engine. Designed by C. D. Mower, for William H. Childs, Greenwich, Conn.

ROUND THE CLUBHOUSE FIRE

WHEN Winter gets up his hook and stands off-shore the boat fever comes on strong and the itch to be away on the blue again takes hold of us. Sunday finds the boys sidling off towards the yards and wading around in the slush looking the laid-up craft over. They walk round and round them, peer at the stern, eye the bow, comment on the spars, find fault with the bottom, and curse the price that makes it not for them. Year after year this is our amusement. Spring after Spring we go through the same yards, see the same boats, and express the same opinions regarding their appearance and condition. If those boats have ears how tired they must get, how weary of the silly comments, that the boat-fevered busybody makes each March under their hulls. A few weeks after the yard is almost cleared except here and there a poor old cripple or richman's forgotten plaything is left standing surrounded by a raffle of timber and truck. Over by the fence lying on its side, the decks weathered and sprung, is a once crack-a-jack racer, too rotten to be moved and going rapidly to punk. And we look on her and think of the days when we will be lying up against the fence, dismantled and broken, while our successors are out cleaving the blue and making a main-sheet haul of health and happiness.

* * *

That story of Winfield Thompson's is a good one, and hikes us back to the fine old times, when jails were few and pirates plenty. Grand days those when if you wanted anything and had powder and ball you could go and get it. When people mixed Religion and Rum in equal quantities and swallowed the discourses of the pulpit and the contents of the bottle without feeling the worse for it. After a life of active, glorious rascality, all you had to do was to settle down in some seaside town and put a brass knocker on the door, and wear a frilled shirt, and all was forgiven, if not forgotten. What you did not do, and what you were not, was charitably chiseled on your gravestone, and your neighbors spoke of you as the respectable Captain Cutpurse who came from nobody knew what and went to nobody knew where. Mr. Black's drawings of the famous city are beautiful, and will give those who have never spent time or money in Newport an idea of what the place looks like. Mr. Sheppard has also done himself proud, especially in the daylight picture; that one is a beauty.

* * *

I was much amused lately to read in a foreign magazine that the funnels seen on American boats were put there for the purpose of making them look like steam vessels and that the chimney was of no practical value. The writer also stated that the majority of our cruising boats made from fourteen to fifteen knots. Now any man who has lived in the engine room of a boat rigged with a funnel will be glad to testify to its value, and to certify over his signature and seal that there is something besides their

beauty to account for their presence. Besides ventilating the engine room, they get rid of the exhaust where it does no harm. An underwater exhaust or an exhaust above the water-line is a nuisance the minute you get into a seaway. It blows like a whale, throwing up a cloud of fine spray, a mixture of water and gas, that even a man with a good stationary stomach finds a trifle distressing, besides keeping the decks continually wet and nasty. Blown off from the funnel you never feel nor smell it.

* * *

The shower of protests that descended last month, having the flyfaddles for their target, have dropped off, and the usual Spring crop of objections to power craft are now coming in. I'm always glad to get these as it tells me that the sailing men are not all dead, and nothing is so good as to feel that you are giving somebody a chance to growl. But lately I don't think the wind-jammers have had any excuse to come aft, as they have had a fair share of each issue, and some very pretty pictures thrown in. One thing I admit is shrunk clean up to the knees,—sailboat designs; but that is not our fault. The designers don't make 'em. But let this reflection comfort the sail crank, the power-boat men are beginning to put masts in their boats and canvas on them.

* * *

Sail on a power boat adds tremendously to the comfort. Take a boat eating into a headsea and pounding, put a jib on her and she will rise and fall steadily and gently. The wind in the jib makes a cushion stop, and kills the pitch and jerk. Take a power craft rolling in a beam sea, set sail, and she will steady right up, and that beastly weather roll that makes life a continual hold-on is gone. What always amuses me is the anxious interest the chronic power-boat man takes in sail the minute he has a chance to be under it. He is the first to want to set and the last to want to take it in. The minute you mention setting sail, even the engineers swarm on deck and rally to take a pull on halyard and sheet. It is your old sailboat man who swears at canvas on a power boat, and wants to keep it stowed and gasketed.

* * *

It is very foolish for men to attempt to split the sport up in factions, and to breed dissensions by inveighing against any form or type of craft. There is room enough on the water for all. You may not care for a sailboat, but that is no reason why a man who does should not be permitted to have and to use one. I have no use for a canoe, but thousands enjoy paddling one; then why should I lift up my voice in lamentation and protest whenever the picture of a canoe is published? It takes all kinds of men to make a sport, and intolerance in the world of sport is just as bad as intolerance in the world of life. The development on some lines is, I admit, a mistake, so far

as anything useful being the result, but so long as even these mistakes bring men into our sport, and help maintain it let us regard them with a kindly eye. Therefore let me ask you to act like sensible men, and stop this continual growling against one thing or the other. How much better it would be if you would jump in and take hold and help get things mastheaded.

* * *

The season coming promises to be the best ever. There will be races galore, both in the United States and abroad. Besides the Venice-Rome cruise, there is a long-distance event scheduled for the Baltic by the Royal Automobil Klubben of Stockholm, Sweden. This is over a run of 250 miles. The prize is a trophy given by the Association Internationale de Yachting Automobile. The Scripps cruise in the Great Lakes promises to be an event that will wake the thunders from Superior to Ontario, and will do the sport a power of good. I have also arranged a race from New York to Philadelphia under the flags of the New York and Camden Motor Boat Clubs. This will be same conditions as Marblehead except the limit will be fixed at 50 instead of 40. Bermuda Power Boat Race for Bennett Cup, starts June 18th, conditions same as last year, and the sailboats will get away from Boston on June 3d. I am hoping to get something else going shortly.

* * *

The Italian Automobile Association has confirmed the offer of a cup valued at \$1,000 and \$1,000 cash for race from New York to Rome, and I am now looking for a pair of boats to go in for the long flight. This will have to be attempted by auxiliaries, as it would be a bit risky to try the run with a full-powered vessel. The distance is about four thousand miles, with ports of call in the Azores and Gibraltar. If anybody has the pluck to tackle this race I wish they would write to me.

* * *

The Bug Class, of which we printed the plans lately, have attracted world-wide attention, and I have had no end of letters regarding them. They seem to have struck things right end-on, and no question but what a fleet of 'em will be built. There is nothing better for the sport than to get a class of small, cheap boats. Such racing breeds sailors, and makes clubs travel ahead and not astern. The 14-foot dinghys born in Toronto are coming into fashion, and before many seasons will be found sailing on all the waters from Iceland to New Zealand. These boats can be built for about \$150; the Bugs cost \$200.

* * *

The death of Charles Barr came like a stroke of lightning to the sport. He was the last man I expected to go off in that way. But it only goes to show what a strain a man is under who is constantly working on his nerve, and performing feats that require great courage and endurance. Barr, outwardly calm, when making a close start or rounding a crowded mark, was all fire within, and it was with tense muscles, jumping heart and nerves screwed to a tension that he performed some daring feat of helmsmanship. In moments of danger it is those of the calm exterior who suffer most; the steady voice, the firm hand, and cool, commanding expression are veils and behind them the will fights fiercely to keep the mask

from falling off. This tells on the heart, this strain upon strain, and some day the overstretched wire snaps and all is over. There is no question but what Barr was the cleverest yacht skipper of our day. There may have been as good before our time, but he stands preëminent in the last two decades. He was not only a fine helmsman, but a remarkable strategist, a combination seldom found on the same pair of yachting shoulders. Much of Barr's success was due to the attention and sense he showed in preparation of the boat and the drill of the crew. The boats he handled were always in the best shape, and crews up to the highest efficiency. Like many crack skippers both professional and amateur, Barr had little regard for the rights of others, especially the smaller fry. He would bully and drive any boat out of its sailing rights if he thought the game could be safely worked. A favorite trick was to turn his head away and pretend he did not see the man on the other tack, while his crew yelled and waved frantically for the smaller fellow to keep clear. But he was a great yacht skipper and his death is a distinct loss to the sport.

* * *

In regard to my personal mail I must ask the indulgence of many. The mail this year has been overwhelming and I have done my best to keep the decks clear and to answer all hails, but no doubt have missed some, or lost others among the raffle. Although I growl at the work, it is one of the few real joys of my life to hear from my boys the world over, and nothing cheers me so as a friendly, kindly epistle such as the following:

Permit me to say that I never considered THE RUDDER a high-priced yachting magazine at its former rates and as long as it remained a magazine devoted to the interests of yachtsmen I was ever glad to have my name listed among the subscribers. I would have cheerfully paid \$4.00 or more a year for the privilege of reading yachting literature, but when the major part of the monthly issues are taken up with matter concerning power boats I lose interest. When I get so that I cannot sail a yacht, then I will quit the game. I followed the pages of THE RUDDER through all of 1910 and when the December issue came to hand with a still newer departure, entirely foreign to yachting, namely the aeroplane, I threw my hands up and surrendered.

I have in mind what you wrote me last year and I appreciate the fact that it is business that makes this necessary. But why should I fill the shelves of my library with literature in which I am not interested? It is a pleasure to me to take down some of the back numbers of THE RUDDER and read over the tales told therein about the real sport and the real men who made this sport, but when it comes to long articles about monkey-wrench sailors going through the water on a cheese knife at 40 miles an hour, more or less, or some other novice cruising through a canal, or similar uninteresting tale, I grow weary, fall asleep and dream of the pleasures of my own little sailboat.

No, my dear friend, it is with great regret that I find that I cannot sign for one, two or any number of years more, unless there is a radical change in the character of stories published in THE RUDDER.

I wish you all success, and with the growing number of men who are taking to the power boat, you should have your share, and I only wish I were one that might help along, but that seems hopeless as I have been unable to arouse the slightest interest in the power-driven craft.

In an hour of trouble and distress the writer of that letter is the man who would stand by the ship until the last plank went under, he would be first at the weather earing, and last to take to the boats. God bless the cause or the sport that has such sacrificing souls behind it for it must fail.

* * *

Here's another epistle culled from my last mail. The writer is young, enthusiastic, and willing to live

and let live. He is the type of man that I am and have been working for, the kind of man that is willing and eager to lend a hand whether it is his watch on deck or not.

I have been an interested reader of THE RUDDER for several years, and should be only too glad to lend a hand anywhere that I could be of any use.

I always read it from cover to cover and am particularly interested in the editorials, as I thoroughly agree with you on most of the points you bring up.

I am only one of the little fellows. I am half-owner in a 30-foot over-all auxiliary yawl. But I think I can say that there is not much in her equipment that was not bought from RUDDER advertisers, either directly or indirectly.

However, I think your advertisers lose sight of one very important fact. That is, that in most cases it is not practical to buy direct from them. I know that is the way it is with us. We see something advertised in THE RUDDER we want. Then we go to the nearest agent that carries their goods and buy from him. Consequently the advertiser never knows that it was THE RUDDER that did it.

We have cruised in our boat from Providence to Florida and have stopped at several RUDDER stations, and we certainly appreciate all THE RUDDER and her crew have done for the sport. We are both subscribers.

Some day I hope we shall drop our mud-hook in some harbor alongside of the Oldman and get better acquainted.

* * *

Before going below for a few days of quiet and comfort let me ask all hands to help me out by looking after the advertisers. These people make it possible for you to have the magazine, and in return I want you to do what you can to make it pay them to advertise here. Of all things don't buy from people who do not advertise. THE RUDDER advertisers are the cream of the trade, the aristocracy of the business, and we stand with both feet solidly behind them, so from them you can buy the best and be sure of getting it. My advertisers know that if they do not live up to our standard they will find the Oldman on their weather bow some fine morning with double shotted guns and the red flag at the foremast head. I take every precaution to keep the advertising pages clean, for they represent our honor, and I want them like Cæsar's wife—to be above suspicion. But don't forget my request: do the best you can for the advertisers and by so doing help the sport along.



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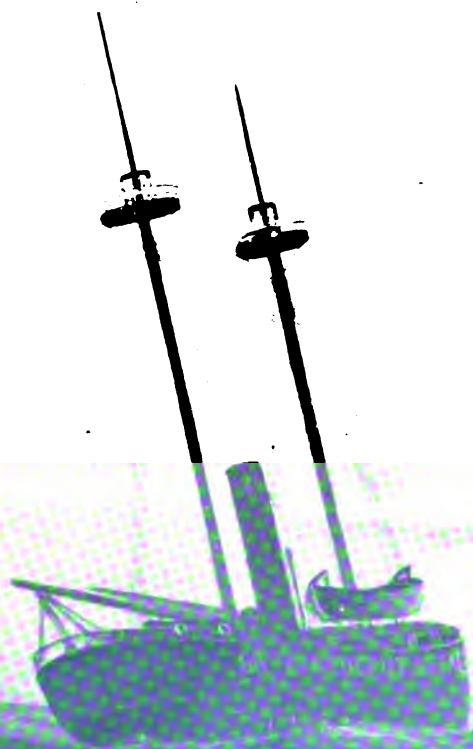
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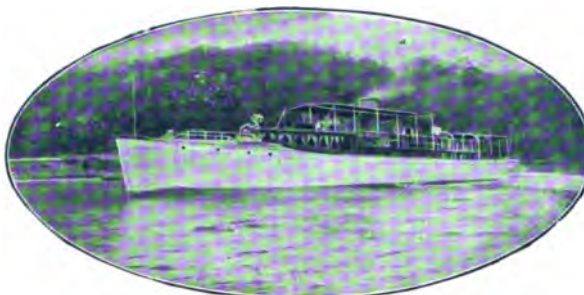
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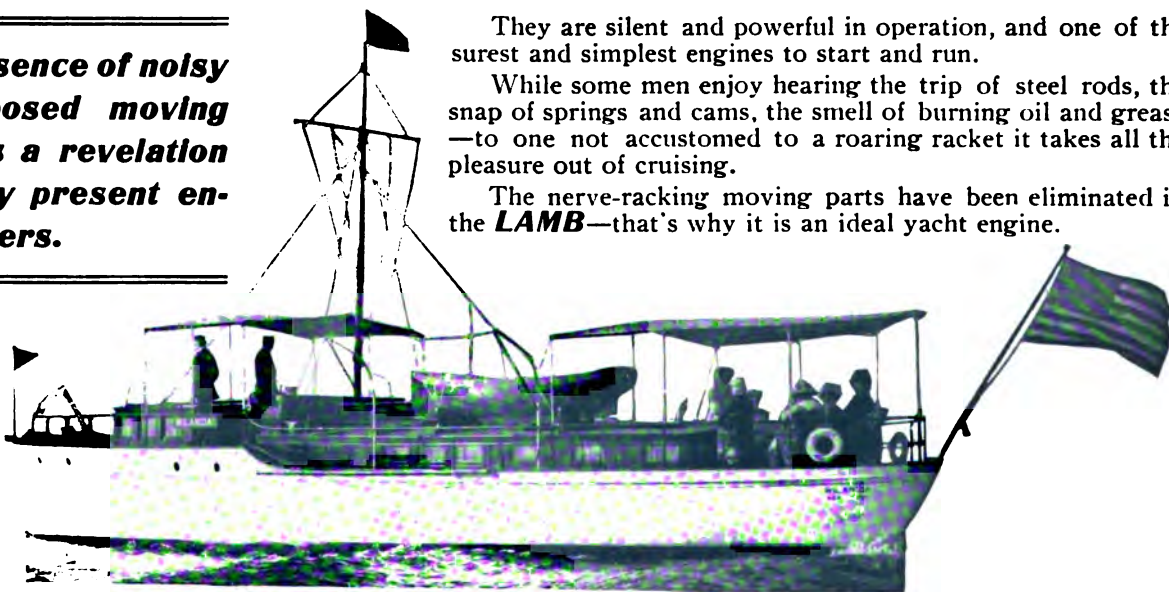
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Work



A Winter Passage

From a Painting by Warren Sheppard

The Rudder

Edited by THOMAS FLEMING DAY

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No. 4

LOG OF TOTEM, 1910

T. A. and C. G. Hine

PART I



HERE are several reasons why Totem got up late this year, any one of which is excuse enough, but probably the chief among them is Davy; possibly it was the new house, because the Skipper does take some of the blame to himself.

'Twas thusly: The Skipper had turned architect, and the new house down on Grymes Hill so completely monopolized his attention that Totem was left to her own devices and, unlike most of her sex, she kept quiet about her troubles—they

were real troubles. About the usual time of the year Davy came around looking for a job, and the Skipper sent him out to prepare the way for the Summer's pleasuring, and himself followed a few days later.

Having been, as before stated, much occupied with building, the Skipper had taken Davy's word for it last Fall that Totem was shipshape for the Winter, and did not himself look her over. When he climbed aboard this Spring he noticed that Davy's bag was standing out in the cockpit, but did not think much of that circumstance until later. Davy's head immediately appeared in the companionway, and a very solemn face announced that we had had an accident; the water had not been drawn from the engine, had frozen and the water-jackets outside the cylinders had burst. Davy took all the blame to himself and wound up his tale with: "I suppose I am discharged, sir?"

The Commodore says the Skipper is too precipitate, and certainly this was one of the times that really called for an elaborate opinion of various matters, and particu-

larly of Davy, but somehow the idea of any one admitting that he was at fault and assuming responsibility, if by any possibility he could cast the burden from him, aroused such wonder and admiration in the mind of the Skipper that it overshadowed for the moment the thought of the damage done and, as a result, Davy is still polishing Totem's bright work, but he has been a very much subdued Davy ever since.

Now this was the time when it paid large dividends to have dealt with responsible folks, for no sooner had the Skipper expounded his trouble and the remedy thereof to the Buffalo engine people than he received a prompt reply to send on the ruined parts and they would make new castings and return them as quickly as possible, although the factory was extraordinarily busy; and they not only did this, but their charges were so moderate as to call forth a pean of praise from the Skipper, who had the bill to pay.

Now we know why Totem did not drop in on Miss Thimble Islands on July 4th, for it was only a day or two before that that Commodore Kroll, after his usual easy fashion, slid Totem into the water. The Skipper has looked about some and Davy has knocked about these shores considerably, and both agree that they have not seen any place where the arrangements for hauling out a boat of this size are so complete and satisfactory. Totem owns to fifteen tons or so, and naturally the Skipper does not like to have her racked, but the Kroll yard is so arranged with rails and trucks that a boat can be rolled to any position with as little jar as the baby gets on an asphalt pavement.

It took some little juggling to get the new parts in working order, but by July 6th Totem was in reasonable shape, and on that memorable day she came down the Passaic without incident and dropped anchor in front of the Stapleton Y. C., which kindly extended its courtesies to the stranger. You see we are now living on the lofty heights of Grymes Hill, Staten Island, and this was a handy anchorage.

Just as Totem dropped anchor there came a tremen-



A Summer Sea

dous blowing of whistles and clanging of bells, and naturally the Skipper was quite set up until he discovered that this was not for him at all, but a general alarm for the Grand Republic, which at that moment was discovered on fire and heading for the Crescent Athletic Club dock across the Narrows. Of course the anchor was got up in short order and Totem was soon heading across the waters, as was everything else movable in these parts, but fortunately a landing was soon made and all the passengers transferred to the shore without accident. The fire made a mighty showing, but it was so promptly extinguished that comparatively little damage was done, as the steamboat was again carrying passengers on the following Sunday.

July 10th.—Here beginneth the first lesson, as the preacher saith. Totem is supposed to be in commission and the Commodore has come down to grace the day, and Klondike Ike has also consented to be of the party. On top of Grymes Hill it was hotter than we ever wish to see it again, here or hereafter, and as soon as practicable a move was made to the waterside and Totem.

We were strongly reminded of last year's struggles when we saw Davy rowing Totem Junior in to the Stapleton Y. C. float for us. Evidently the kicker had gone wrong again; but the Skipper soon discovered that some enterprising gentleman had stolen the plug from the switch, and shortly had things in working order again, much to Davy's satisfaction, as he thinks it is a low-down disgrace to row a boat in these days of power.

We were soon underway, but the new machinery is not as yet working as smoothly as the Skipper could wish, and there was more or less engine talk of one sort and another, mostly profane, during the first half hour, but finally one cylinder which was not helping much was cut out entirely, and we limped down the bay on three legs. No one but the Skipper worried about it, for we had at last found a place where it was possible to be cool and comfortable, and as few folks were so fortunate as ourselves, we were doubly happy.

The Commodore has been at home in the Atlantic Y. C. for many years, and on his invitation we dropped anchor off its hospitable portals, and in due course added such various ingredients to our constitution and by-ways as tend to make one think this old world a pretty good

place after all. During, before and after this interesting episode, various squalls came out of the heavens from one point and another, and there was some talk as to what might happen to us later, but some went out to sea and others tackled Jersey, and while we heard the rumblings of distant thunder, nothing came to disturb our equanimity.

Going back was much like coming down; the Wilson petrels varied the trip somewhat as they hovered close to the boat while crossing Gravesend Bay. The Passenger watched them with a glass for some minutes and became quite interested in their queer antics: it seemed as though they were endeavoring to walk on the water and while so experimenting were using their wings for the purpose of balancing. The books tell us that this is not the true Mother Carey's chicken, or stormy petrel, that being an inhabitant of European shores, but sailors have dubbed the entire petrel family with the pet name, and all are now generally so known. For some unknown reason the Upper Bay has been full of the birds for ten days or so.

It was necessary to put an engine expert on the engine, and as the New York end of the Buffalo folks said yes with a sweet-by-and-by attachment the Skipper, being precipitate by nature (see the Commodore for details), turned to friend Edge, and so they journeyed together to the Stapleton Y. C., for Totem was still partaking of its hospitality, and soon discovered that one of the cylinders was badly scored inside. What did it no one knows, but there it was, and the only thing the expert could suggest was sending it on to Buffalo, which meant more delay and vexation of spirit.

We have on Grymes Hill a Gardiner who, it appears,



A Skipperish Pose



Alongshore in Vineyard Haven

cultivates all the virtues, paying especial attention to neighborliness, and he, hearing of the Skipper's distress, suggested that the cylinder be taken to his machine shop—he to try his hand at removing the scratches—and thus it came about that in very short order the cylinder was back in place and working with the best of them. The best thing I can hope for such a Gardiner is that he reaps as he sows.

July 26th.—Klondike Ike is no longer "Klondike Ike," but "First Mate," for did he not this day steer Totem through the sunken forests off Giffords? These are the forests that the oystermen plant, and they largely run to root crops. When on shore the First Mate runs a fraction of one of the great New York dailies, but on the water he is so salt that his food must be prepared without seasoning lest he should become even as Lot's wife.

The particular excursion in hand to-day had Brown's shipyard at Tottenville as a goal. I suppose that if Totem felt she needed help of any sort she would make for Brown's of her own accord, just as the baby runs to mother with its hurt finger. In this particular instance a rambunctious power boat had bumped Totem, as explained below, and she went home to be petted.

July 31st.—The reason why Totem was so anxious to confab with "Uncle Al." was due to the fact that a wild Indian was running loose in a power boat one day and, while cavorting up and down the coasts of Staten Island, rammed Totem and cut through two inches of oak chafing strip, broke a piece out of the mahogany beading and dented the mahogany side of the house. The Skipper was on board at the time and he called the Indian several kinds of things, and none of them probably that even an Indian would care to be. This was a small specimen of the Smith tribe who, in the excitement of the moment and under the tongue lashing he was receiving, unguardedly offered to pay for the damage due to his lack of skill in handling a boat, but when the repair bill was sent to him he began to haggle over a paltry matter of \$5 and the Skipper dropped it. His friends must be proud of the noble tar, both as a man and a boatman.

Uncle Al. can fit wood to wood quite as handily as nature does it, and so when we arrived at Tottenville this morning to bring Totem back to her anchorage off the Stapleton Y. C. house, the chafing strip was as if it had been born again.

The "old man" and Johnny came back with us. We had about the finest day that the year has brought forth, and dawdled along up the bay, stopping now and then to change carbureters or eat lunch, for there was plenty of room and more time, and it did not matter if we did let Totem drift for an hour now and again, and enjoying ourselves in manner so indolent that even the fishermen, who come about as near to doing nothing as a man can and keep awake, were put to shame.

August 2d.—This day Totem started for her old anchorage in Echo Bay. The Engineer was on board and the engine was left to him. The engine has not been fit this season; the freeze-out last Winter seems to have done some mysterious thing that no one can locate, and the result has been about 280 revolutions against 380 last Summer. The experts say that nothing is the matter, that the engine needs to be run until she wears herself smooth, but our precipitate Skipper does not approve of any such slow method, and he is apt to backfire whenever the subject is mentioned.

The spark coil had been seeing New York, and it took some time to get it back in place; then the Engineer likes to eat something in the middle of the day and, one way and another, the start was not made until 1:30, and with a strong, fair tide it took just three hours to do the job. If you say it quick, like that, it does not sound like much of a trip, but the log would not amount to a hill of beans under such lack of cultivation—it would be a good deal like the small boy's definition of a "vacuum": "A large, vacant place where the Pope lives;" that is, it would be if we were to substitute the Skipper for the Pope.

But really the Skipper insists that there is not a thing to say, and the Passenger was not along, and I do not quite see what we are going to do about it.

August 6th.—This afternoon we adjourned to Echo Bay, where we found Totem lying at her usual anchorage off the New Rochelle Y. C. float. About the first thing was to stow one of Davy's dinners. Davy, by the way, has taken lessons of the Skipper until he is a pretty good cook. This time he had some chops fried *a la Totem*, which were about as tasty as one could ask, but the man who does not require a soda-mint after eating a couple of them has a boiler factory inside of him. I believe they are breaded and that a half-teaspoonful of Worcestershire sauce and a small onion are dropped into the frying-pan along with the necessary fat.



Totem's Anchorage in Echo Bay



A Fair Wind

We had the Professor with us this time. He went through college with the Skipper, and though he is a full-fledged professor himself now, he and the Skipper are of one mind in regard to the professors of other days; in fact, his chief hope for the next world appears to be a desire to even up sundry accounts with a certain grave and reverend gentleman who was supposed to teach him Greek in the days of '77. I sincerely hope that their paths will not cross, for if they should the Devil will certainly get his due.

August 7th.—This was one of those delicious days that cannot be put into words and, having made no plans, we could give ourselves up to heedless enjoyment of the moment. The fact that Totem stopped out in the Sound to change carbureters was of small moment to those not burdened with responsibility.

The Skipper made an effort to learn where we wished to go, but not making much of a success of this he headed for Indian Harbor, one of his pet spots. He admires the group of dwellings on Belle Haven Point and never misses an opportunity to run his eye over their good points.

Here we dropped anchor, poked along shore a bit in an effort to find something to photograph, took a run around the harbor in Totem Junior and in due course made our way back to the mooring in Echo Bay.

August 13th.—The Skipper has recently renewed acquaintance with a fellow-voyager of other days who has now settled down into the humdrum of married life in New Rochelle: the Rev. B. J. Wollaper, celebrated for his intimate acquaintance with and original and forceful method of handling Biblical names and places. We were invited to partake of the gentleman's hospitality and are under the impression that we did his viands full justice.

August 14th.—The Commodore and our reverend



A Bit of Echo Bay

friend of last evening were Totem's guests to-day. The engine was started with prayer, and for this or some other reason it acted about the same as usual (which has been largely like the way the fellow kept hotel out West—like h—l). However, we slid out into the Sound and presently were up against the question of whither, but the Skipper with his unerring judgment solved the difficulty by taking us to Indian Harbor, presumably in order to see if he had overlooked any of the dwellings on Belle Haven.

The Commodore, just to show that there was no hard feeling, invited all hands on shore to the home of the Indian Harbor Y. C., there to have lunch, and thus we laid the foundation for both health and happiness.

Coming back was much like other comebacks, and hardly seems to call for comment.



For the Benefit of Those Who Go Down to the Sea in Ships

August 20th.—This being Saturday the Skipper, the Quartermaster and the Passenger, being like the lunatic, the lover and the poet, who "are of imagination all compact," gathered themselves together in Totem's cockpit. The Skipper came early, and with friend Edge and a Breeze carbureter spent the afternoon trying out the new fixture, which proved successful, much to the Skipper's delight, and much to the relief of the language, which has been under something of a strain lately.

During the evening we communed with nature as exploited by a brilliant moon, and about five bells doused the glim, and silence reigned, so far as the Passenger knows, until the Quartermaster began raging up and down the cabin shortly after daylight. He could not sleep, and could see no reason why the rest should. Himself bereft of rest, he broke the rest of the rest, as one might wrest rest from the restful. Selah.

August 21st.—The day promised fair, as did the morning papers, and after a leisurely breakfast and clean-up, the dinghy was swung up to the davits and all hands posed in positions indicating how mightily they were expanding their muscles, while the Passenger took a picture of the group. The Quartermaster is to be particularly commended for his pose. If, in real life, he ever worked half as hard as the picture would have us believe he is doing here, he certainly astounded his friends beyond measure, and if he ever put up a better bluff than was done in this case he surely holds the championship belt.

At 9:15 the engine is started, the mooring line cast off and Totem begins to chug, chug out of Echo Bay. We are off for "a life on the ocean wave," so to speak. As usual there was no morning wind in this neighborhood and the Sound, working in the interests of old Sol, gave us a glassy smile that was shivered into a thousand sparkles by Totem's prow.

The Skipper was mostly interested in the new carbureter and its effect on Totem's pace. He amused himself watching it work or taking the time between buoys and then measuring the distance on the chart, and when he found that we were making something over nine knots an hour he was as pleased as could be.

The Quartermaster was arrayed in his usual happy smile and a pair of high-power glasses that his better half recently brought from the other side and, the day being warm, he seemed quite comfortable.

The Passenger amused himself with the morning papers and a new camera. He photographed everything and everybody, and when there was nothing left for the



Getting the Dinghy on Board

camera to do he crawled into his shell and stopped up the hole with the Sunday *Sun*.

Lunch time came and went, as did lunch. About seven bells we passed New Haven and sighted Clarke Island; the house with the sun on it is as good as the Star of Bethlehem at its best, and we steered by its kindly light until the red buoy which marks the boiling rocks just West of Thimble Islands came plainly in view. The wind, which came to us from the South, had for some time been piping to the waves, the tide was low, and there were more kinds of trouble about those sunken rocks than the average mariner fancies: Thus, Totem went by on the other side, and by 4:15 we were running into smooth water among the islands.

The friends on shore had been given the grand pandemonium by Totem's screecher, and we lay at anchor waiting for the King to come in person and convoy us to his domain. This he did; but, Lord, help us! before we were taken to the palace we must look at his chickens and his cow (a most ordinary cow); his kitchen garden and strawberry bed (it is long past the time of strawberries), and the red signal he has set on a certain rock on which he has been in the habit of running his kingly barge when navigating these waters. (That rock is not in our course, and we are not interested in it, even unto this day.) We were also called on to look at other necessary and useful adjuncts to life on an island in mid-sound, such as one might expect to find 'most anywhere, particular attention being called to a certain cubby-hole much favored by a celebrated Mr. Williams who once visited the island.

Within the palace the situation is quite different. Here the Queen reigns, and while the King is good enough to hunt eggs and pull radishes—and while he is allowed to roam the palace almost at will—and even to talk—his sovereign authority ends at the screened door: Here we bowed down to Queen and Princesses.

Recognizing that the hard, stern life of a sailor seldom permits of other than plain and, sometimes, scanty food, the King passed around a well-gnawed ham bone which proved to be much like the widow's cruse, for by the time we were through there had been gathered up of fragments seven baskets full. (Possibly this does not quite gee with the widow's cruse, but it's as near as I can come to it at the moment.) The Queen had devoted her art to waffles, sweetened with maple syrup, that were so light they floated us back to the time when our mothers did as much for us.



The Passenger Doing His Share

In due time the sun set and the moon arose, and thus was the balance maintained.

Moonshine on an island with Princesses all around is one of those combinations that defeats words. Waffles and maple syrup are good and sweet in their way, but for pure clover honey give me an island bathed in moonlight and dotted with Princesses, with a good-natured King and Queen who retire early.

As this is not a photograph, details are left to the gentle reader, who may recall some such situation in the fairy-tale of his youth.

August 22d.—Owing to a strong Southerly wind and a strong tide which kept her from heading up into the wind, Totem nearly rolled her decks under last night, and Totem is high-sided too.

The Skipper, sleeping in his thwartships bunk, alternately stood on his head and feet during the so-called hours of rest, and feels constrained to testify to his strong dissatisfaction with this style of thimblerrigging. To be one with nature under such circumstances might suit a poet looking for a new sensation, but is far from pleasing a practical man who desires to sleep, and when the wind fell at daybreak, and the rolling ceased, the Skipper rolled over for a nap. The Quartermaster fared better in his fore-and-aft bunk—at least he said he was all right; but then he never kicks at anything, not even when he was routed out for an early breakfast on this particular morning, that the dinghy might kick itself over to Stony Creek and back for the sake of ice and grub, merely because the Skipper wished to get away by nine o'clock.

When the time came to go the Swiss Family Clarke was quite ready to be rescued from its island home, and after this difficult and dangerous proceeding had been successfully accomplished the Thimbles began to fade into the distance at 9:30.

William of Clarke Island, who spends his waking hours devising methods whereby the King may be amused and his descriptive and damnatory powers be kept bright, had arranged for a rainy day on this, the twenty-second, but William as a prophet became as a thing of naught, not only in his own country, but even to the uttermost bounds of the Thimbles, for the day was as dry as an old bone.

Possibly one of the most curious and interesting features of the day was the engine; it only skipped once all



All in the Day's Work



A Thing of Gas

the way to Stonington. It may be that one of the Princesses gave it a pat in passing, and lulled its usual contrary-mindedness into inactivity, or possibly the thought that William had made such a mess of his weather prognostics had so filled its hard heart with gladness that it felt it could afford to be good without entirely blasting its reputation. The Skipper thinks the new Breeze carbureter recently installed may be responsible, but that seems to me too practical and, knowing how good I would be if a Princess patted me just right, the first theory is my favorite.

While endeavoring to please that member of the family known as the Inner Man all hands were called on deck to repel boarders—a submarine with nothing visible but two short poles was headed straight for Totem; but the Quartermaster with great presence of mind swallowed the lump in his throat and, bringing his powerful binoculars to bear on the enemy, the latter scuttled off for some less pugnacious neighbor. It was later discovered that the entire submarine fleet was maneuvering in these waters, and lucky it was for the Government that Totem did not run into any of them.

By three o'clock the anchor was overboard in Stonington harbor, and some one of the party who evidently does not care a rap for money proposed a trolley ride, and soon all were gaily spinning across country toward New London. Here, after buying a postal card of an old Avery house, the Clarks were en-trained for Stony Creek, and those for Totem returned as they had come after acquiring certain peaches said to be native grown.

Some hundred and thirty, or forty, years ago the British attacked Stonington, and whether it was the recollection of that, or just the natural New England curiosity, does not appear to have been inquired into, but, whatever it was, the returned travelers found great excitement along the water-front due to two submarines which had been discovered slowly feeling their way into the harbor. The natives appear to have entirely overlooked the fact that Totem lay at hand with gasoline enough to blow the strongest submarine to the locker of Mr. Jones, from which no submarine traveler returns. The Skipper who, with unblanched cheeks, saw all this, tells us that when un-submarined, these cub monsters of the deep look like whales with lumps on their backs, as though the "Great Wind," our modern political Don Quixote, had been laying about him with the Big Stick.

(To be Continued.)

I BUY AN OLD CAT

Winfield M. Thompson



EVER notice how keen most chaps are to give an old catboat a bad name? One would think the old age of a catboat was no better than that of a courtesan, if he believed all the wise things he heard said on the subject—of the catboat, not the courtesan—by every chair-warmer who may happen to own an 18-footer, a dory or a sailing tender. "You don't want to have anything to do with an old catboat," they say solemnly. "They're no good. They're sure to leak. If they don't leak around the step they'll leak around the centerboard

box; and when they begin to leak, there's no stopping them."

So much for general defamation of the cat class. The defamers speak in general terms chiefly on hearsay. Let them have in mind a particular old cat, and then hear them linger over the painful details! By the time they have done talking you are expected to believe there never was a worse boat than that particular old cat, and never a worse type than the class to which she belongs. It is heartrending, wail the Jeremiahs, to think that men otherwise sound of mind should risk their lives to such a man-trap as an old catboat. Surely, a lunacy commission should sit on each and every case of such a man.

Having heard all sorts of things against the old catboat in general, and all the individual old catboats in the bay, one by one, from persons who never sailed catboats, I was prepared to make a sacrifice of myself in the interest of science, and see whether an old catboat with a bad name was necessarily fatal. I had cherished such a desire for some time when the psychologic moment arrived for buying Duster. Before taking up that point in the story, I may say that I had been as solemnly warned against Duster as ever man was warned against witches. She was a hoodoo boat, to begin with, said my informant. She had once upset and drowned he didn't know how many people. He was not sure of the reason for her upsetting. She probably laid down out of pure spite. As for the people drowned, or the date of the fatality, he could say nothing. Pressure for specific facts in the course of time reduced the fatalities to a dog, but the details of the death of Towser were never forthcoming. Foolish as this kind of talk was, it had had its effect, when taken with other gloomy tales, of giving Duster a bad name. This fellow had heard that she was crank. That one was told that she leaked. Another

said she was weak, and worked like a basket in a seaway. Still another had heard that when driven she pounded and plunged "something scandalous."

This kind of talk, spread out over three or four years, had the cumulative effect of deciding me in the idea that if the boat ever came my way when I was in the market, I would buy her, just for the sake of finding out how much truth there was in the reputation given her. That there was some grain of truth somewhere in the various yarns, I was willing to concede, but that it was unfairly used I was sure. Prejudice makes mountains out of mole hills, and I was convinced prejudice against catboats had a good deal to do with the statements about Duster. I considered that the matter was representative of a general condition in boating, and that if I could go to the bottom of it, and take my RUDDER friends step by step through the story of my relations with an old cat of a bad name, I would be doing a service to the sport. Naturally I started out to make a case for the old cat. This story has to do with how it was done, and the result.

The bulk of the narrative will wait yet a little while I





Duster, in 1894

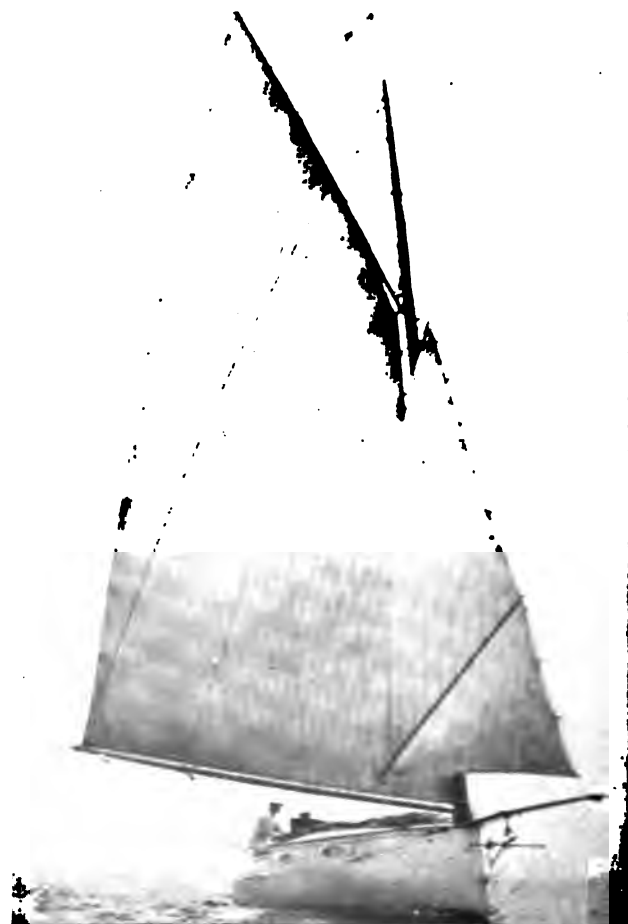
introduce the boat. Duster was built by C. C. Hanley, in the days when his shop stood at the head of the sands at Monument Beach, not far from where the new Cape Cod Canal will debouch into Buzzards Bay. There are many boatmen who believe those were the golden days of Hanley's building career. He surely was a marvel at putting wood together. His early training as a maker of piano cases gave him a great advantage over ordinary builders in fine boat work. Whenever he accepted an order for a boat, the price was sufficient to warrant a careful job. (His price on Duster was \$550. To-day it would be \$900.) Each of Hanley's boats of that period was in a way a labor of love. When he had finished his work the boat's skin was so smooth you couldn't see the seams.

Hanley built cats of various sizes at Monument Beach. The celebrated Mucilage—now Iris, twice champion of Massachusetts Bay—was one of the larger ones, being about 27 feet long. Duster was one of the smaller, being but 22 feet 6 inches over all. But her model was the same as that of Mucilage, so Mr. Hanley has informed me. She had the flat floor, wide stern, full quarters and graceful sheer which distinguished all Hanley cats, and her freeboard was rather lower than present rules en-
 courage. Her water-line length was 22 feet, breadth 10 feet 6 inches, draught 24 inches, freeboard at the stem 15 inches; least 15 inches; at the stern 16 inches; in the center of the stern transom 20 inches. Her stern was 7 feet 9 inches wide at the deck, and 8 feet 1 inch at its widest width. She had a small cabin and a large cockpit with seating room for twelve people. The boat was built in the Fall of 1891 and delivered in the Spring of 1892.

From Mr. Hanley himself, and from various men who at different times have owned the boat, I have been able to pick up enough facts about her career to make a fairly complete biography. They may not be exact, but they are approximately so, and serve as a document having a scientific rather than a romantic value.

I built Duster for William K. Nickerson, of Provincetown, who had been an engineer on a fast ex-press boat in Buzzards Bay way. Mr. Nickerson had retired from the rail. (You may see him at Provincetown, known of all men in Province as the seagoing hacks that take you about Provincetown in good old summer time.) He wanted the

best he could get in the catboat line, and he could afford to indulge his fancy. Besides, there were boats in the bay that needed beating, and Mr. Nickerson allowed that he could give them what they wanted. He was not long in showing folks that his new boat could sail. He warmed everything that came his way. Soon the fame of the boat spread. It got around the bay, and nearly every man with a keen scent for catboats, between Provincetown and Gloucester, knew there was a boat at Provincetown that could go some. It chanced that holding an official job with the railroad on which Skipper Nickerson had run his engine was Harry E. Mapes of Cohasset. He was keen for catboats, and when he heard of Duster as a fast one, he wanted her. He offered Mr. Nickerson good money for the cat. The deal was closed, and in the Spring of 1894 Duster changed her hailing port from Provincetown to Cohasset, the harbor that lies inside the jumble of great boulders marked by Minot's Light. Mr. Mapes had a suit of first-class sails made for Duster, by Wilson & Silsby, and went after the money with her in a good many races for four or five seasons. She had a bowsprit on her when he bought her, and he put on a new one, longer than the other, it being 10 feet outboard. Hanley had never intended the boat for a bowsprit rig. He has a proper dislike of bowsprits on cats. But the style of rig was different on the north side of Cape Cod than on the south side, where Duster was built, and as all the other boats in the bay had bowsprits, there was nothing to do but retain hers. Her sail plan was big, having a base line of about 43 feet from tip of bowsprit to end of main-boom, and a mast 35 feet



The Year Before I Got Her

high, with a hoist of 20 feet on the mainsail. I have not the area of the sails, but it could not have been much less than 900 square feet. This sail the boat carried well in ordinary summer weather; but it was at this period in her career that she got a knockdown which may be counted as specification No. 1 in the counts against her brought forward by the defamers of cats. It appears that Duster was caught in a squall somewhere off Boston Light, and sank. Her crew escaped, but a dog owned by Mr. Mapes, the mascot of the racing season, was drowned. With a self-draining cockpit of moderate dimensions the boat would not have gone down. However, the incident gave Duster an undeserved black eye, particularly as Mr. Mapes shortly thereafter sold the boat. I have not his account of the affair, nor is it material here, except to show the origin and value of the first count brought against Duster's reputation.

The next owner of Duster was James T. Ball, an engineer employed by the city of Boston. He took her to Dorchester Bay, where there were owned, and still are, some fine cats. After using the boat a season in and about Boston harbor, Mr. Ball decided on rebuilding her cabin and cockpit, and in 1900 gave an order to Charles A. Borden of the Calf Pasture yard, Dorchester, for the work. Mr. Borden ripped out the small cabin trunk and the interior, and put on a cabinhouse 10 feet long, with sides 16 inches high at the after end, having 4 feet 5 inches headroom under the carlines, and transoms to sleep four. It was a lot of cabin for the size of boat. He raised her cockpit floor, and built a water-tight cockpit 6 feet 8 inches long, by 8 feet 3 inches wide, drained at the forward ends by lead pipe scuppers. A hatch 21 by 27 inches was placed in the center of the cockpit floor,

giving access to a roomy lazarette. (More detailed description of the boat's interior arrangement, with some personal views of its good and bad points, will be found further on.) The bill for the changes made by Mr. Borden footed up \$170. At present prices it would be nearer \$300.

The larger cabin reduced Duster's speed, but she was still fast. Mr. Ball kept her several years—"And I never sailed a better boat," he tells me—and when he decided to sell her there was no lack of bidders. Her next owners were two young men who also made Dorchester Bay her hailing port. They were John Burroughs, a city employee in Boston, and Frank I. Smith, a real estate dealer. It was during their ownership of Duster that I first saw her. I had been scouring the yards, looking for a boat to buy, when I came across her in old John Colter's yard at Commercial Point. I say old John Colter, because Mr. Colter was a matter of eighty-three or eighty-four at the time, and as spry as a youth. He had owned cats and raced them up to his seventy-fifth year or so, and knew a good boat when he saw one.

I well recall my first glimpse of Duster. She was lying between two other boats, and only her stern was visible at first. From that and a look at her bottom I saw my ideal small cat. I went to her as surely as a fragment of iron flies to a magnet. Her cabin was locked, and I could not see its interior, but the oak and mahogany finish of her cabin doors, her tight, well-finished cockpit, and the generally smooth and sound appearance of her planking charmed me. In looking over her bow I found, however, that the seams of her planking directly under the mast-step looked a little larger than the others. This is the spot to which it pays to give strict attention in



At the Old Dock on the Mystic

looking at a catboat, and I examined it well, deciding that there was probably a leak at that point, which it would take some dollars to fix.

Learning that the boat was for sale, I sought out Mr. Smith. The appearance of that seam in the bow was before my mind, and I was prepared to offer him less than his price by as much as I thought would be needed to make repairs and a tight job. But alas for my caution! Another man came along, closed with the owners, and Duster changed her hailing port from Dorchester to Newburyport. Her new owner was an operative in a shoe factory in Haverhill, Mass., on the Merrimac River. Newburyport is at the mouth of the river.

I kept up my search for a catboat, which resulted in my buying Twister, at Osterville. Readers of *THE RUDDER* are familiar with the story of Twister, told in these pages under the title of "A Catboat Sailor's Yarn."

When it came to laying up Twister I thought of the snug berth in which I had seen Duster, in good old John Colter's yard, and I had my boat hauled out on the very spot where I had first seen the slick little Hanley cat.

When I sold Twister—in one of those I-wish-I-had-a-little-ready-money periods that come to most of us—my mind went back to Duster. Not at once, you understand, for I was then in the no-more-boat-for-me stage. We all have it, and it lasts longer with some than with others. In my case it lasted a season, for I was busy getting a house built. Twister went into the land on which the house stood. The builder got all my money. I dug in the garden, played a little golf, walked down to the yacht clubhouse once in a while and felt like a fish in a basket of sawdust, cursed a little at my stupidity in parting with Twister, went home, and tried to forget it. But I just couldn't forget it. By that time my no-more-boat-for-me had become so faint you couldn't have heard it with a stethoscope. In fact I was hankering for a boat so hard there was a lump in my throat.

That was at the end of my first season ashore. By the time the second season opened I was writing the man who owned Duster. He was not anxious to sell. Yet I went secretly down to Newburyport, and looked her

over. This time I went into the cabin, and when I sat down found it rather low-ceiled for a 6-footer. That cured me for a little while, and I contented myself with a season of week-end cruises with my friend Sea Wolf, out of New Bedford.

But Duster was still in my system when Fall came. One day I was looking over some notes a friend from the Chelsea Y. C. had brought in for publication in the newspaper which has the honor to employ me, and came across this: "Commodore Lawrence's catboat Duster is on the sales list." Duster? Owned by the commodore of the Chelsea Y. C.? So the Merrimac River man had sold the boat, and she had come back to Boston harbor! It was a bitterly cold day in late Fall, but I put on my hat, and hiked for the Chelsea Y. C. Crossing the Chelsea bridge I saw the boat at anchor off the clubhouse. There was a ball of ice on her mooring rope, and she looked rusty and disconsolate, with her tall mast swinging from side to side, from the wash of a steamer, and her long main-boom down on the top of the house. Inquiries showed that the boat was for sale at a reasonable price. The commodore had bought her late in the season, and other plans made it desirable for him to dispose of her.

When Duster had been hauled out for the Winter—at Medford, on the Mystic River—I went to inspect her. Again the carlines rubbing my noble dome of thought when I sat down in her cabin stayed my hand. So the matter rested for some weeks, while I pondered that question of headroom, an element in a boat always dear to my heart. At last a brilliant idea struck me. The transoms might be lowered!

On measuring them I found they were 15 inches high. In usual practice 12 inches is a high transom on a catboat, and some are not more than nine. I could lower them a good four inches, and thus make my comfort jibe with my desire to own the boat. In a few days Duster was my property.

In looking her over before the purchase I had in mind the various charges that I had heard against her. It was hard to believe any of them should be true. In



She Seemed Largely Bowspit



Nearly Ready to Float

fact, although she looked weathered and ill-cared for as she stood in the yard, she seemed to be as sound as a nut, while her planking was smoother than that of a new and high-priced launch that lay next to her. I looked again for the evidences of weakness in the bow, but the seams there were small and tight. The seller told me he had found she leaked around the mast-step. I recalled the words of the Jeremiahs: "All old cats leak around the mast-step, and you can't stop 'em." Here I was getting at the meat of the matter, on both sides of the question. How had the leak been stopped? Easy enough! A new oak step, and new garboards forward, had been put in, at a cost of \$33, and the leak had been stopped. She was perfectly sound in every respect, the seller said, and leaked only around the centerboard box, but not enough to hurt. Ho ho! "All old cats leak around the centerboard box, and you can't stop 'em!" I believed I could stop that leak, so I said it didn't matter. It couldn't be much of a leak, said I, for her garboard seams were sharp-edged and small, and showed no signs of strain. Neither was the box itself unsound.

When Spring had sufficiently advanced to permit of outdoor work, I went at Duster with great joy. One of the first jobs was to take off her bowsprit. When I had first seen her in the yard she looked largely bowsprit. To me a catboat with a bowsprit is no longer a cat, but a kind of nondescript. I had urged the owners of catboats in the bay to discard bowsprits in racing, which

they did, and bowsprits for catboats, after a long vogue north of Cape Cod, had gone out of fashion.

Naturally I lost no time in discarding that 10-foot plank, which housed less than a foot over the stem. It was fastened through the king-plank with a couple of heavy bolts, set up with a nut each inside. It had two bobstays, turned into bronze plates that straddled the stem, and were bolted through with composition bolts that were firmly headed up. To get these off was quite a task. The single shroud on either side was anchored to a heavy bronze eye with a long shank, fastened through the top strake of planking with heavy bronze screws, that came out mortally hard.

When I had got these things clear, the bolts through the deck remained. To get at them I must remove an elaborate galley of pigeon-holed construction in the forepeak. I put the axe into that most cheerfully, though it was made of the finest white pine; and having cleared out the débris, I managed to worm myself into the forepeak far enough to get a monkey-wrench forward of the mast. I found that there was no room to swing the wrench in the space between the mast and the stem. That settled the business for that afternoon. Next day I brought a larger wrench, and after a good deal of twisting, and turning, and standing on my neck, I got the nuts off, and drove out the bolts.

When that flat and weather-worn bowsprit was removed, I felt that Duster was emerging from a long and undeserved period of disgrace. She looked like another boat the moment it dropped to the ground. The graceful lines of her bow and the contour of her stem had been completely obscured by the contraption of that bowsprit and its gear.

With the aid of a husky young man I burned off the paint that lay in thick layers on the boat's planking, and having got her stripped, topsides and bottom, found that she had been further disguised by the repeated coats of years, with little if any attempt at burning off. The plank under the paint was as hard and smooth as a bottle. It was hard pine. The sternboard and rudder were oak. When a priming coat had covered the old craft's naked sides I began to feel that things were coming on, and a new Duster was coming out of the cast-off shell of the old.

One thing that bothered me about the condition in which I found the boat was the mast. It had been left standing all Winter. It was a fine-looking stick, slim and shapely, rising 32 feet above the deck. It seemed like a very tall mast for a 22-foot boat. We scraped the mast down, gave it three coats of varnish, and it came out handsomely. Still, I was sorry it had been standing all Winter. Moisture must have seeped down inside the wedges, and that does a stick no good. So I examined the mast with great care under the deck, but failed to find a weakness that later in the year was to cause some little trouble.

Before the outside work on the boat had gone far I had made more or less of a wreck in the cabin, by ripping out the transoms. They had been built high, I found, to please the fancy of an owner who yearned for drawers under them.

"A man must be crazy to want drawers under the transoms on a catboat," said I, as I chucked them into the cockpit. He probably would have put me in the same class had he seen me at that moment. But the drawers were pungent with unventilated mustiness, and explained in a measure the stale smell of the cabin when

I opened it for the first time. The smell was also traceable in part to the galley in the forepeak. The grease and crumbs of years had accumulated behind the shelves, making a gummy deposit that could only be reached by ripping out the construction.

As I cleaned out this place and the drawers, I drew up a list of "Don'ts" for boat owners. Two of them are obvious. Another had to do with unventilated coat lockers, of which there were two in the cabin. Another was about great, cumbersome ice-boxes to slide in and out beside the centerboard box, and form steps for the gangway. There were a pair of these. The flap you open to put stuff in or get it out of the box formed the step. The trouble with these things is in the fact that generally they refuse to slide, and when you pull on them they may come out with a rush, and striking against the cabin table, take a piece out of it. Failing that, they may jam your toe, or bark your shin, or knock you over backwards. Besides, the dirt tracked into the cabin gets down through the crack in the flap, and you can't keep your food clean—unless it is in covered receptacles. So I am against the box idea for the storage of food, or anything else that has to be got at often.

When I had ripped out the transoms I found it was a good deal of a job to get them back again. By persistence I got them into place at last. I made them 11 inches high, and found that they gave me plenty of headroom when I sat down on the cushions. In fact, they seemed to make the cabin larger in all its dimensions. On the port side I took out the coat locker, beside the gangway, and turning its door sideways, fitted it under the deck for a dish locker, as a drop-door. Then taking about a foot off the port cushion, I secured a space 22 by 22 inches on which to set up a Shipmate range. When this space had been zinc-covered, as well as the bulkhead, and the Shipmate installed, I had about as neat a galley as you will find in an old boat. I painted its woodwork dark green, and the inside of the china closet, like the ceiling back of the transoms, white. The cabin ceiling and sides was natural finish, and in bright condition. The dog-hole forward, where I had taken out the galley, I fitted with a slightly elevated floor, cut off from the transoms by a headboard 6 inches high. This floor was perforated for ventilation, and painted dark green. The forepeak ceiling was white.

This being done, the alterations were complete, except for the installation of plumbing, of which I shall speak later; and a more roomy and cheery cabin no one ever saw on so small a boat. It had a bright, comfortable air, and as the gangway was finished in mahogany, and there was a hood of mahogany over the centerboard box, with a post of the same wood rising from it to support the roof, with a neat little brass lamp fastened to the post, and a white-pine table, there was quite an elegant air to it as well, when all was done. The cabin cushions were nearly new, upholstered in brown corduroy. There was a fable that they were stuffed with hair, but I found in the recutting of one that the stuffing was cocoanut fibre, with a thin upper layer of hair. I may add that for a cheap filling this seems a good one. It is light, and unlike cotton and similar fillings, it does not get musty.

I confess that I got more fun out of making over the cabin than in doing the outside work. The cause of this in part was the weather. I was ready to swear that it was the most fickle, malicious, rantankerous Spring weather I ever saw, and I seemed to be the specially allotted one to make things go wrong. I was the ever-ready

little rain-maker, always on the job. Let the sky be clear and blue, and the North wind brisk and dry, and let me start varnishing, and presto! large, splashy globules of water, chasing each other rapidly, developed into a downpour to spoil our work. There was an amiable and highly effervescent Swede in a boat next to me who on such occasions used language that made me think the Vikings must have been great masters in the art of expressing violent sentiments.

Our one consolation, in bad weather, or mine, at any rate, was the interest I took in the yard where we were at work. When it rained I could call on the worthy old skipper who ran the yard, and had a den of his own up under the eaves of an old mill. In earlier times the yard had been a mill property, and timber was got out there for various shipyards in the neighborhood. Now not a shipyard remains on the Mystic, and our neighborhood was famous chiefly for being the section from which the celebrated Medford rum came. Even the rum business has ceased there; and though you are told there are still a few barrels of the potent liquor stored in the old red brick warehouse not far from the boatyard, you may be assured in advance that there is not the slightest danger of your seeing or smelling any of the horrid stuff.

The work of fitting out dragged along so slowly, owing to the weather and the brief periods I could give each day to the work, that it was May before I had the boat ready to be run down the ways. The yard men rolled her down on a runway, and left her for the tide to lift her. This gave me an opportunity to watch, rather anxiously, for the water to make its appearance through



Overhauling a Hooker



A Scrub Down

her seams; for although every seam appeared to be closed, I knew it was not in the usual order of things for a boat not to leak when first launched. I watched particularly for the leak around the centerboard box, but could not distinguish it, for water soon appeared in every seam. "It will not take her long to swell," said I. But by the time we were in tow of a power boat, and being naked down the river at eight miles an hour, I was aware that she was leaking as fast as a boy could pass the water out with a bucket. Constant bailing kept her free in the ten-mile tow to South Boston, but that was about all. When I moored her for the night it was with a determination not to be surprised in the morning if I saw her sunk on the flats.

Great was my pleasure on my arrival at the clubhouse next day to see the old packet riding lightly at her mooring, and looking as handsome as a swan to boot. The water made during the night had not covered the cabin floor; and in a cat the floor is about six inches from the bottom, as a rule. This showed me the seams had swelled quickly. I pumped her out, and looked for the leak around the centerboard box. A great deal of sponging and peering led me to think it was at the forward end; but of this I was not sure, and the work of fitting out went on without the leak having been found. It was not large enough to be dangerous, or more than annoying; but the fact that it was there, and could not be found easily, made me the more determined to find it. I was bound to show the Jeremiahs they were in both the wrong church and the wrong pew.

We were the whole of May fitting out, what with dull weather and many little jobs to perform. One thing that delayed me was getting a proper iron to take the forestay at the stem. The mast was stepped so far forward that it seemed desirable to set the foot of the stay a little way out from the stem. I had seen an iron designed for this purpose by Hanley, that seemed to me suitable for Duster, and I got a promise from Hanley that he would make me a pattern for one. He was so

long in getting at it, however, that I made a design for myself, and had a keen and kindly young Irish giant in charge of the forge at Lawley's hammer it out for me. The material used was soft Norway iron. The finished article was light and graceful. We had it galvanized, and the job came out finely. But when I went gaily to fit it to the boat, I found the holes had been punched too far forward in the parts straddling the stem, and the pins could not pass the bronze stem-iron.

This meant the forging anew of the iron. It was done with skill and in good humor, and at last all was ready for putting it on. I had thought at first I would put the iron on myself, but I now shied at the job. I knew it took a trained hand, and special tools. So the boat was taken to the yard. Here the foreman was fierce of manner. The only carpenter available had hurt a finger and could not do the job alone. With my aid he began boring for the pins. He struck a bolt, broke his bit, swore, went for a drill bit, and was gone a long time. I feared for my sailing on the morrow, for it was Saturday afternoon. Finally the foreman, big and capable, came down on the float and turned to on the job. He swore the iron into place, swore the holes through the stem, headed them up with a line of plain and fancy swearing that should have fused the iron, and when all was done, as fine a job as you would wish to see, smiled as blandly as a child. Then I discovered that his professional manner and the man himself were things apart.

Aside from a new sail, running rigging and the stem-iron, I bought very little in the way of new fittings for Duster. My whole bill for sail, paints and outfitting was under \$125. But I saved money by doing my own tinkering. One item was in the matter of necessities. I felt that I could not afford plumbing, nor was it desirable in a small cat. So I went to a dealer in house builders' supplies and bought a seat which I proposed fitting between the transoms forward. It was a little large for the place, so I took it to the club workshop and cut it down to fit.



Landing Without a Tender

On the 30th of May I started Duster in the annual free-for-all race at South Boston, finishing well down the list, but having the satisfaction of beating two larger boats that had formerly worn the bells. I was less interested in the result of the race than in the behavior of the boat. I had cut two feet off her boom, making it 30 feet, and had reduced the hoist a foot, making it 19 feet. The gaff was 18 feet 6 inches. To these dimensions was fitted a handsome Wilson & Silsby sail, made of special duck. It sat beautifully, and I was delighted to find that in a strong breeze the boat handled as well as in light weather. It was a genuine pleasure to steer her, after handling Twister, which was always strong headed. Under this head I may say that every man who handled Duster in the course of the season remarked on her steering. Her balance was perfect. She was also as stiff as any catboat of her size I have ever sailed, while in a coming breeze and smooth water she would go like a streak.

One gratifying feature of owning the boat was the admiring comment that she often excited. Although much run down when I got her, Duster was like every other well-built boat I have ever seen. The good work showed in her, and she had as much style as when she was new. Her fittings were bronze, and were light and neat, and in keeping with her finish. An ordinary boat of her years would have looked her age and then some. It would take a wise stranger to tell Duster's age within eight or ten years.

But the purpose of this narrative is to tell about troubles, and how I settled them. The leak persisted, small but ever on the job, and I kept watching it, and

moralizing on the meannesses of leaks in general. One snag I encountered in locating it was the presence in the bottom of the boat of a filling of pitch between the timbers, to the depth of nearly two inches. It had been placed there by the builder, according to his usual custom. While pitch may be an excellent preservative in a tight and new boat, it is not desirable in an old one that leaks. I decided the pitch must go, so on a certain hot afternoon I began to dig it out. In some sections it was loose, and came up easily; but in others I had to chip it out with a chisel. The fragments flew about the cabin, and wherever the sun struck them, melted, as I discovered later, each making a black patch on the woodwork.

By industry I got the pitch all out in three afternoons. Then I began to sleuth that leak in earnest. Persistent sponging showed the water came from the forward end of the box on one side, but from the after end on the other. I followed the dampness to its source on the forward end. It was under a finishing strip at the end of the box. Off came the strip, and behold, there was the leak! The water came in at the end of the second plank on the starboard side of the box, and had run down under the covering piece of finish. It was the simplest kind of a leak to stop. I went home that night much comforted.

Next day, while serving dinner, I noticed water coming over the cabin floor. Angels and ministers of grace defend us, what had we now? Up came the floor, out came the ice-box impedimenta, and after a hunt in the lazarette I found that water was spurting in a stream from the lead scupper of the cockpit on the starboard side, just below the water-line level. I recalled that I



A Sunday Afternoon Off the Brewsters

had used a screw driver to clear the scupper of ice, when I first bought the boat. My chicken of imprudence had now come home to roost.

The cork from a pickle bottle inserted at the outboard end of the scupper stopped the trouble temporarily. Next day I took the boat to Lawley's and put her on the ways. A new scupper cost me but \$2.40, which was cheap enough, considering the ways of plumbers, marine and otherwise. The leak in the centerboard box was also stopped, and the total bill was under \$10. I was delighted.

But my troubles were far from being at an end. One afternoon about this time as I was filling away from my mooring for a little sail, I noticed something was wrong with the boat. She was sluggish and did not respond to her helm. After watching her for a second or two I guessed the cause. A glance down the centerboard box confirmed my fears. The board was out of the box. Fortunately I had put a new and stout hauling rope on it a few days before, and I relied on this to hold the board until I could reach the float. I had something of a task to do this, in a crowded anchorage, with the board towing hard and sometimes taking bottom.

At the float I took the ball off the rope, bent on another rope, and let the board drop to bottom. Then with a boathook I caught the rope, by which I drew the board up on the float. I next slung it fore and after with a small cord, that I had first let down in loops through the box, and fished out with the boathook. Dropping the board overboard again, I got it into the box by means of the slings. The tide was falling, and I beached the boat beside the sea-wall, and at low tide found the pin just hanging in the keel. It was dark by

this time, and I had a chance only to drive in the pin and drive an old file in alongside of it, to hold it in place, pending better repairs. In this way the thing held for a week or more.

Meanwhile my old friend the leak was not absent. The boat needed pumping every second day. So I went on another still hunt for it with a sponge. This time I traced the water to the after end of the centerboard box. Back the boat was taken to Lawley's, and after chiding the yard men in fitting terms for not having gone to the bottom of the business, I ordered them to find that leak or keep on working until they did. I was ready by this time to spend all my ready cash to discover the source of that pesky leak.

The usual method in locating a leak at that yard was to fill the boat in part with fresh water from a hose. This will betray the hole. In the case of Duster it was long before any water seeped through. At last it showed at the after end of the centerboard box.

"Got to take out a floor timber to get at it," said the foreman. "The timber is up against the end of the box." They took out the floor timber, and the cause of the trouble was clear: In cutting a keel log for a centerboard box it is customary with some builders to extend the cut fore and aft in a long V, and fill in the space with another piece of wood. This V in Duster's keel had been very tightly filled, but the filling piece had shrunk, leaving a seam which could not be calked owing to the cross timber over it.

Once this spot was calked, Duster was as tight as a cup. I had no need to pump her oftener than once a month, unless I threw water into her to keep her sweet. The cost of the repairs, and a few others that I had



The End of the Season

made, such as putting on new blocks of oak to hold the boom crotch, newly fastening the mainsheet traveler, securing the centerboard pin by plates in the keel, and making and fitting the stem-iron, brought my total bill for the season with the yard up to a matter of \$30. The work was well worth the price, and the money was as nothing compared with the satisfaction of seeing Duster what I had the faith to believe from the first that she could be made, a tight and sound boat.

As a cruiser she was just what I wanted, for my courses were never long. For a week-end run to Marblehead or Gloucester, or a trip of a few days to the North River, below Minot's, she was perfectly comfortable. Like all small cats, however, she was at her best in the protected waters for which she was built.

When all was done, and my season's expenses were added, I found Duster had given me the cheapest season's sport I had ever had in yachting, while her added value in the market more than offset all I had spent on her. A greater measure of content than consideration of this fact gave me, was due to the triumph I experienced over the Jeremiahs. One after another I met them during the season, and our talk was like this:

"Duster. Why, that isn't the old Duster, is it?" Accent on the "old."

————— (Being my answer.)

"You don't say! Well, now, I never thought she was such a handsome bo't."

————— (More talk from me.)

"That a fact? Well, I always did say you could make a catbo't tight and keep her tight, if ye used any horse-sense about it!"

—————? (Being an invitation.)

"Why, yes, don't know but I will! Well, I swan, this is a fine cabin! Never had any idea she had such a fine cabin. And that's one of them Shipmate stoves! Well, I'll be cussed! Took your wife on a cruise this Summer? Don't say! Bet ye was comfortable, in a tight and able little packet like this. I c'n remember when she used to clean 'em all out in her class, down Cohasset way. There warn't many of 'em had any business with her! Well, here's looking at ye!"

It would hardly be fair to end this log without telling how Duster and I wound up our first season together. We surely made something of a splash, and it was traceable to that doubtful mast. If I had followed my first inclination, and taken it out for inspection at fitting-out time, it might not—but here is the story.

I had regarded the mast with suspicion from the first, and had nursed it through two or three tough chances. One day when running under a double reef off Minot's, with a snuffy Sou'wester behind, I had heard something snap in the cabin. I thought at the time it

was some part of the woodwork. Later I amended the view.

The smash came on August 28th, a mild day with a moderate Easterly breeze. I spent the forenoon sailing down the harbor, with some friends on board. After calling at the Pemberton landing for another passenger, I stood out into Hull Bay close-hauled on the port tack, when there came a sharp snapping sound from the fore-peak. There was no mistaking it this time. It was from the mast.

I let the boat shake and made an inspection. There was a neat crack about an inch below the deck, on the port side, extending horizontally half around the stick. I knew what that meant. If I got home with it, I would count it a good job.

Filling away cautiously with boom to port, I started back for Boston. The run was made successfully, the party landed, and I was standing out to my mooring when the wind backed suddenly to Southwest. I was obliged to take the port tack aboard, and had hardly done so when—crash! My rig lay alongside. Fortunately it fell clear of boats at anchor.

I had prepared an anchor and had it in the cockpit. This I cast over the stern, and proceeded to clear away. A life-saving crew, from a floating station in the bay, came and offered assistance. Friends rushed to my aid. The club launch took me in tow, and soon Duster was being stripped beside the club float. Sail and spars were soon ashore, and the worthy craft was towed to her mooring looking like a picked chicken.

Examination of the butt of the mast showed the cause of the trouble. It had gone clean at the deck. The remaining part, when taken out, dropped into two pieces. It was split from step to deck. There had been no way of my knowing that, without the mast having been taken out, as the crack was open only on the forward side, and looked like a common seasoning-crack. Some foolish virgin had driven a galvanized spike horizontally into the mast at the deck also. Neither had I known that. The moisture of the Winter at the Medford yard had completed the job. The mast was dozy at the deck.

Most cheerfully I canceled my engagements afloat for the rest of the season, and charged the cost of a new mast up against the next season's outfitting account.

I had got my money's worth out of Duster, oceans of sport, and plenty of good, honest, fat-reducing work. There had been times in my labors on the old packet when I felt like cussing; but I can say now that if I had the chance to do the thing over again, I should do it just as I did the first time—with the exception of inspecting the mast.

And Duster will continue to fly my colors until further notice.



SOME TRICKS OF IGNITION APPARATUS

Herbert L. Towle

IN times happily gone by, when ignition apparatus was less reliable than it is now, its possibilities in the way of giving its owner ingeniously diversified surprises were more frequently in evidence than they are to-day. The fortunate owner of a good high-tension magneto or a good single spark battery system of ignition may run the season through without once being reminded of the mischievous imps that used to perch on every coil, igniter plate and magneto, and bite their thumbs at the worried engineer. To-day those imps of trouble are better understood, and perhaps that is one reason why their appearance is not so much noticed or dreaded. Occasionally, however, even the experienced owner may be puzzled by something a bit out of the usual run of instruction books and "Hints to the Amateur." A few of these unusual troubles have fallen to the lot of the writer of these lines and will be set forth for the possible benefit of others.

It happened that my first gas engine experience had to do with make-and-break ignition of a most unsatisfactory sort. As the type of igniters therein used, fortunately for the public, never came into general use, it is not worth mentioning here. My next experience was with jump-spark apparatus having battery and individual coils. As the coils were of a good make, my troubles were limited chiefly to keeping the tremblers in order, and preventing overdoses of oil from fouling the spark plugs,—a task, by the way, in which I was only partially successful, owing partly to the type of plugs, and partly to the crudeness of the mechanical oiling device.

Perhaps my comparative immunity from high-tension ignition troubles gave me too rosy a view of what I was entitled to in freedom from trouble. At all events, when later I came into possession of an engine with make-and-break ignition and a low-tension magneto, I certainly felt as if I had fallen heir to all the annoyances that ignition apparatus could develop.

The engine did not smoke unreasonably, and the carbureter was probably as good as the average. Nevertheless, it was the exception that I could run three hours without having to stop and remove the igniter plates, in order to clean off the deposit of soot which had short-circuited the lava bushings.

The ignition cams were not of the preferred snap design, but had a sloping fall as well as rise. This made it necessary to adjust the length of the push rods to secure uniform timing.

In course of time the igniter rocking stems wore loose, and thenceforth no amount of adjusting would ensure anything like accurate spark timing. This was because the contact was established on the upward movement of the push rod and broken on the downward movement.

As the rocking stems wore, a certain amount of slip or lost motion took place between the moment when the descending push rod engaged the stem and the moment when electrical contact was actually broken. Since the descent of the push rod was progressive, this naturally resulted in the slip representing a certain arc of crank movement, at any point of which the actual break might occur. I timed the igniters repeatedly, using a voltmeter in series with the contact points to determine the exact instant of separation. After a single run I would find that the timing was again wrong, and I would repeat the performance, with no better result. Of course snap cams, such as are now commonly used, would have avoided this trouble.

Considering the looseness of the rocking stems, I might very readily have experienced a trouble encountered by a friend of mine, who also had make-and-break ignition. His engine developed missing, which for some time he was unable to trace. At length he noticed a spark jump from the rocking stem or finger to some adjacent metal part. The electrical connection between the stem and the metal in which it worked was so poor, owing to oil or to loose contact, that the spark could not travel. My friend corrected this trouble easily by putting on flexible connectors from the rocking stems to the nuts holding the igniter plates. I was myself troubled with missing, and tried the same remedy. To my surprise no benefit was observed. On investigating further I traced the missing to weakening of the current flow in the instant before break, owing to the slip or lost motion above mentioned, and the consequently relaxed pressure between the contact points. As my contact points were steel, and burned away rapidly, I thought that the burned scale at the contact surfaces interfered with the current flow. In addition, owing to the progressive descent of the push rods, the burning of the contact points changed the spark time, by causing the outer rocking finger to move further up before contact was established, and therefore to be engaged sooner by the descending push rod, at the moment of break. I thought then to cure my troubles by putting in iridio-platinum points, but again the remedy left me no better off than before. Of course, the thing to do was to throw away the worn-out igniters and put in new ones. But I had already about made up my mind to reform the system altogether by laying it on the scrap pile. Meanwhile, I clung to it out of curiosity to see what else I could learn.

While this experimenting was going on, I learned one thing which should have been clear at the outset, if I had thought of it, which I did not. This was the important difference between a make-and-break system and a high-tension system, in regard to current leakage due

to sooting of the igniters. Everybody knows that a jump-spark current must be much more carefully insulated than a low-tension current; consequently I expected to find that I could take considerable liberties with the oiling of my engine, and I was surprised to discover that a very slight deposit of carbon on the lava bushing of the igniter plates caused irregular missing, which ended in total stoppage of the engine, and inability to start it by spinning the crank, as I had been accustomed to do. The reason for this singular behavior was soon located. In a high-tension system each spark plug is completely insulated from all the others. In the make-and-break system, on the contrary, every igniter is connected in parallel with all the others, and grounding or short-circuiting of one igniter will draw current from the others, exactly as a short-circuited incandescent lamp socket will extinguish every lamp on the circuit. More than that, a leakage due to soot on one igniter plate may not in itself be sufficient to prevent a spark, but if a similar deposit is present on every other igniter plate of a four-cylinder engine, the four soot deposits will work in parallel, and between them may divert current enough to extinguish the spark of one and all the igniters. In union is strength, and by the same token the make-and-break igniters of a multi-cylinder engine must be as clean as the proverbial hound's tooth if they are not to make trouble.

It should be said that much of the leakage could have been averted by so forming the lava bushings as to give the escaping current a long path to travel. I believe that is done in most present engines.

During all this time, and increasingly as time went on, I had difficulty starting the engine. I had put on a new carbureter soon after acquiring the engine, and laid part of my starting troubles to that. In time, however, the difficulty of starting became so acute that I surrendered my pride and bought a battery, on which I had hitherto scorned reliance. To my no small surprise, the spark delivered by the battery through an ordinary gaslight coil started the engine without the slightest trouble, and I then realized that the magneto spark on cranking had been far weaker than I had suspected. Doubtless some spark had occurred, but as it was very feeble and took place between two contact fingers of cold steel the gas about it had not had a fair opportunity to burst into flame.

Shortly afterward my researches were terminated by the magneto abruptly striking work for good and all. I was thankful then that I had the batteries, but the long contact dwell of the igniters exhausted the current so fast that a few hours' running sufficed to cause missing, and I consigned the whole outfit to the scrap pile with no regret. I had learned, I thought, all that it could teach me, and I was now ready to take a rest and enjoy life.

Almost any sort of a make-and-break system arrangement is less economical of batteries than a high-tension

coil, owing to the peculiarity just mentioned, namely, that the make-and-break igniter makes a solid and continuous contact over a considerable angle of crank rotation. During all this time current flows, though only the last instant of its flow is really needed for the spark. With a high-tension coil the flow is at least broken by the vibrations of the trembler. On the other hand, for power-boat service the high-tension system requires very thorough insulation. This applies not only to the battery systems, but equally to a magneto. The spark plugs should have porcelain hoods, and these should be taped over the cables to prevent moisture from entering between head and cable. The connections of the cables to the coil or distributor should be protected also, and most thoroughly. If the design of the distributor permits, it is best to have a soft rubber hood put over the whole thing, so that spray cannot possibly fall on it. Some types of apparatus are furnished in this form. Lacking better, the owner should provide his own protection in whatever form circumstances permit. A complete hood over the engine is the safest thing. A small open boat caught in a blow, and with its spark plugs at the mercy of the first drop of spray that falls on it, is in a bad situation.

The points most necessary to bear in mind about the usual form of roller or snap timer used with individual or synchronized battery coil systems are that it needs lubrication and that it wears out. I have never seen any of these commercial timers that I should call reliable in the same sense that, for example, a trolley car commutator is reliable, although I freely grant that when we consider their limitations and requirements they do very well. On the other hand, a timer is not an expensive piece of apparatus. The sensible thing to do is to treat it like the wheel on a trolley pole, and when it wears out to get another. It costs little, and is easily replaced.

Regarding individual spark coils, or in fact, any spark coils which work through a trembler, the writer confesses he is not enthusiastic. They served well in their day, when nothing better was known, and the best of them are most creditable pieces of apparatus. They are not especially economical, however, since even the best of them makes several sparks per explosion, where but one is needed, and the magnetic trembler is not and cannot be in the same class for reliability as positively actuated contact makers. The writer's choice would lie, depending on price and other things, between a high-grade single-spark battery system, and a high-grade high-tension magneto, with battery supplement for starting. The chief objection to the magneto is that it sometimes costs pretty nearly as much as the engine, and no one seems to have been able to contrive a low-priced magneto which can be trusted to go about its business without asking favors of any one. The small owner must perforce accept the necessity of occasional tinkering as the price of economy in first cost.

HOW TO SWING A YACHT FOR COMPASS DEVIATION

Warren Sheppard



TO swing a yacht for compass error, it is not necessary to be a navigator; a knowledge of the compass only is necessary. Finding the compass error by range bearings is much easier than by azimuths of the sun or stars. As a general rule, little or no deviation will be found on wooden vessels. On those, however, in which the iron steering gear is near the compass, there will often be a large error on some courses. On the yawl *Fanshawe*, we found more than one point while running to the Eastward. It is customary, if the error is found to be small, to make up a steering card and keep it at hand. If the error is found to be great, you will feel more comfortable to have a competent man adjust it permanently and make up a card for any small errors that remain. Don't fool with large errors, they will bite you when you least expect it. Take this example and think a moment. You find, say, on East that you have $1\frac{1}{2}$ points of Westerly error. According to rule, you must put her $1\frac{1}{2}$ points to the Eastward to overcome it, making her course E. S. E. $\frac{1}{2}$ E. Now when you have put her on E. S. E. $\frac{1}{2}$ E., what is her deviation on that course? You will see at once that there is a lot of figuring and averaging to point her just right. If the error amounts to $1\frac{1}{2}$ to 2 points and you cannot arrange to have it adjusted, and you can find a place on board free from error, I would prefer to make up a steering card from the Standard as described farther on. You are more sure of what you are doing than when applying large deviations to courses. You would have to do this on cards made from the range; from the Standard it is direct.

Before swinging the boat, see that the lubber line on the compass is exactly fore and aft and that she is on an even keel. Then remove all metal from the vicinity of the compass that does not belong there permanently: even sail bags, as some sails have enough flexible wire rope attached to them to make quite a disturbance when close at hand. Awnings and other things must be remembered. One kind of iron at 6 feet will affect the compass as much, perhaps, as another kind at 5 feet. It is pretty sure that anything at 7 or 8 feet is harmless. All this having been

attended to, select the best range available, that is, choose two permanently fixed objects as far apart as possible: a beacon and a lighthouse, or tower that is marked accurately on the chart. I would not be so willing to trust two buoys unless they were important enough to be placed very accurately, like a buoy marking a danger or a bell on the edge of a shoal. Large seaports will always have the buoys right, unless some unusual accident has shifted them. Little shallow harbors and those with shifting sand-bars cannot be trusted.

Having decided on a range, any point of the compass will do, but I think we would all prefer North or South. Get out your chart and rule a line through the two marks and with your parallel rule find the exact magnetic range. Then prepare your card with the whole points of the compass. In one column, write over the top, "Ship's Head," next to that "Range Bearing," then "Deviation," and the last column "Course Made Good," being careful to keep each on its proper line. When using it, look in the Made Good column for the course you want, and then look in the Ship's Head column for the course to steer to make that course.

How you will turn the boat will depend on the weather and the conveniences at hand. On a calm day, in a good harbor, you can pull her around with a dinghy or a small launch. If there is a current, you may be able to anchor across tide and pay out chain until she rides to a stern kedge anchor. Then haul in the chain and pay out on the kedge until she rides to her chain, bow on. She would need a kedge out in any case to check her on each point, long enough to allow the compass to settle and record the bearing. If you swing her from, say, North to South with no deviation, you need not bother any more, for there is none.

It must be understood that deviation is always for the ship's head. Be sure to be far enough from the mark you take aim over, that the diameter of the circle she swings in will not change the range bearing. Get as far away as you can—a mile is little enough if convenient, two miles is better, unless the boat is quite small. In any case, swing in as small a circle as you can. In the case of a power boat, you can sail over the line on all courses, and take the range bearings as you cross.

We will suppose your range turned out to be N.E. magnetic. We will begin by placing the yacht directly on that point, bringing the bowsprit and the two marks on one line. If the range bears N.E. by the yacht's compass, there is no error on that point. (See diagram No. 1.) Now put her on the next point,

and so on around the compass. If the range still remains N.E. by the compass on all points, there is no error. When determining the error, it is easy to make a mistake; it is so natural, if the *range* changes to the Eastward, to think the deviation is Easterly, when the reverse is the fact. If you will think a moment, the range itself cannot alter. If the range becomes Easterly, it is because the compass needle has been forced WESTERLY, leaving the range to the Eastward of the correct magnetic bearing. Therefore, if *your* (in this case N.E.) *point* moves to the *right of the range*, the deviation is Easterly; if to left, Westerly. Or to reverse: if the *range* changes to the Westward or left of N.E., deviation Easterly; to right, deviation Westerly. Study diagrams.

Therefore, when the yacht is placed on N.E., if you find the range to be N.E. $\frac{1}{4}$ E., you have $\frac{1}{4}$ point of Westerly deviation. (See diagram No. 2.) The course made good will be N.E. $\frac{1}{4}$ N. Each time you check the yacht, write the range bearing on the card on the same line next to the Ship's Head column. Also on the same line, the Deviation and Course Made Good, which are to be worked out after all the rest is finished.

Ship's Head	Range	Deviation for Ship's Head	Course Made Good
N.E.	N.E. $\frac{1}{4}$ E.	$\frac{1}{4}$ pt. W.	N.E. $\frac{1}{4}$ N.
N.E. by N.	N.E. 2° E.	2° W.	N.E. by N. 2° N.
N.N.E.	N.E.	0	N.N.E.
N. by E.	N.E.	0	N. by E.
North	N.E.	0	North
N. by W.	N.E.	0	N. by W.
N.N.W.	N.E.	0	N.N.W.
N.W. by N.	N.E. 2° N.	2° E.	N.W. by N. 2° N.
N.W.	N.E. $\frac{1}{4}$ N.	$\frac{1}{4}$ pt. E.	N.W. $\frac{1}{4}$ N.
West	N.E. $\frac{1}{2}$ N.	$\frac{1}{2}$ pt. E.	W. $\frac{1}{2}$ N.

If there are no ranges available, find a place on your yacht where there is no attraction, which is easy on one built of wood. Find the exact fore-and-aft line and draw a line, or I prefer to fasten down a

slip of wood about a foot long, place your spare compass squarely against it. Then swing her very slowly around. As her head nears each point, call out the warning, and the instant she touches it, call course. You may have her on East, the correct magnetic. The man at the wheel may tell you E. by S., of which you will make a record next to your own. Steer E. by S. to make East. Steer E. $\frac{1}{4}$ N. to make E. by N., and so on around the compass.

If you have no time to swing her and want to go to sea, you can set each course by the Spare or Standard compass. The slip of wood will be handy at night for placing the compass, which can then be examined by your electric flashlight or lantern. The compass is the most important thing in navigation. Any one who can become familiar with all its troubles and the remedy for them, has learned much.

In diagram No. 1

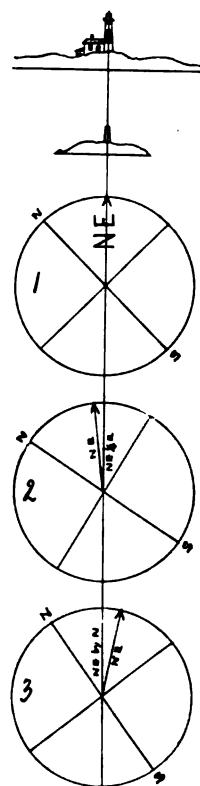
The ship's head and range are both N.E. No deviation for ship's head.

In diagram No. 2

Range shows N. E. $\frac{1}{4}$ E. The N.E. point of the compass has been forced to the left or Westward. This shows $\frac{1}{4}$ point of Westerly deviation for ship's head on N.E.

In diagram No. 3

Range shows N. E. by N. The N.E. point of the compass has been forced to the right or Eastward of the range one point. In this case one point of Easterly deviation for ship's head on N.E. You would have to sail N. E. by N. to make N.E. correct magnetic.



HOW TO BUILD A TWENTY-EIGHT-FOOT SERVICE BOAT, WHALE

Fred. Wm. Goeller, Jr.

T

HIS boat with her breadth of 9 feet will not be as easy to construct as a narrow craft and it is only fair to those intending to build this boat to say that it is a little different proposition. The difference lies in the shape of the planks. Where, in a narrower boat the planking is pretty straight, in a wide boat like this the plank will be somewhat like the illustration (Fig. 1). And for this reason when you are buying the lumber get boards with a good hook in them. Get the bend



one way, as an S-shaped plank does not work out to any particular advantage.

Starting at the beginning the first step is to lay down the boat or in other words draw it out full size on the floor. This is the only correct way and if it is not done there is no saying what difficulties the builder will get into before the boat is planked.

The floor should be level and even and for the best results of narrow planks. This of course may be impossible to get, so that the best will have to be made of what is most convenient.

If you have not a place in which to do this it will pay to find an unoccupied loft or other similar place to use until the moulds are gotten out.

The space should be about 35 feet long by 25 feet wide. The first step is to lay out a base line. For this use a strip of pine about $\frac{7}{8}$ inch by 2 inches wide with one face built up true with a chalk line and nailed securely to the floor. Put this in such a position that it will correspond with the center line about which the water-lines are drawn.

Then using a steel tape measure off 28 feet on it, squaring the marks across the top face and that one on the side of which the lines will be drawn.

From these two points erect perpendiculars about 15

feet long. These will be the over-all length of the boat, and no part of it except the rudder should project beyond.

From the base line measure off first the half-breadth of the keel, then the sections 1, 2 and 3 feet out.

About five feet above the base mark off for the line called the base line on the line drawing. Two feet six inches above this mark off the load water-line. Nine inches below and three spaces nine inches apart above the load water-line should then be laid off, corresponding to water-line 9 inches below, 9, 18 and 27 inches above respectively. It is not necessary to carry the last one, 27 inches above, past station No. 10.

The next step is to lay off the stations. Using the steel tape again lay off the stations, 1, 2, 3, 4, 5, etc., 18 inches apart starting from the bow. These should be laid off on both the strip forming the base line and on the load water-line.

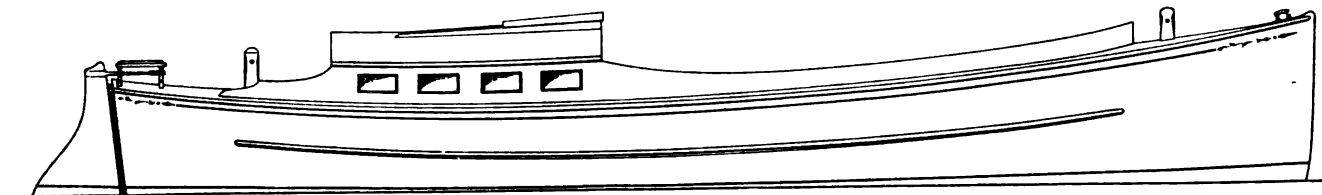
The proper way to draw these straight lines is to take a chalk line and stretch it tightly from point to point, snap it on in this manner and then go over it with a long straight edge using a heavy carpenter's pencil.

When this is done we will have a series of straight lines—and be sure they are straight—corresponding to the lines on the drawing.

We are now ready to lay out the sheer lines, deck, load water-line, etc.

In the table of offsets the heights given are from the base line, which is 2 feet 6 inches below the load water-line, while the half-breadths are from the line on which we have the strip nailed along.

Now starting with the heights lay off the sheer line first. The dimensions are given on the drawing for the heights at the ends and in the table of offsets for the heights at the different stations. The batten to be used for this should be about $\frac{3}{4}$ inch or $\frac{7}{8}$ inch thick, about 2 inches wide at the forward end tapered slightly for about three-quarters of the length and then carried to about $\frac{3}{4}$ inch wide at the aft end. There are two ways of holding this to the points—either by driving nails through it or by putting the nails both sides; in either case don't drive the nails down flush as these may have to be pulled out to fair up and in case the nails were driven in flush the batten will be all damaged pulling it up.



Outboard Profile of Twenty-Eight-Foot Service Boat, Whale. Designed by Fred. W. Goeller, Jr., New York City

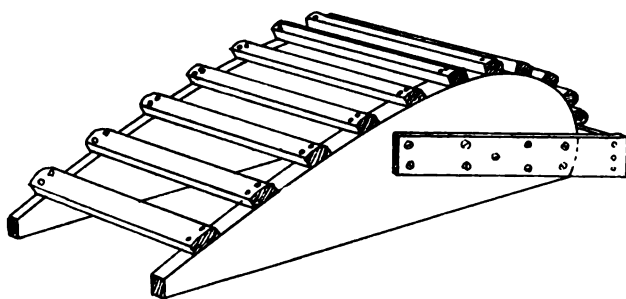
The heights for these sections, the rabbet and bottom of keel are taken off in a similar manner to that employed in finding the sheer heights.

When these are taken off and marked in their proper positions the widths of the deck and water-lines should then be taken off and marked on the corresponding water-line on the body plan.

By the same method the diagonals are marked off on the body plan.

When all of these points have been accurately laid off draw in the sections, using a batten the same thickness throughout for the forward ones and a tapered one for the middle and after sections on account of the straight floor and the sharp turn of the bilge.

Having completed the laying out of the lines the next step is to make a mould over which to bend the frames. The illustration below shows the manner in which this is done.



Mould for Bending the Frames

The reason that this mould is much more round than the actual boat is because the frames all straighten out when taken off, and even if they didn't it is always an easier matter to straighten them out a little, while it is a hard job to get more bend when they are cold.

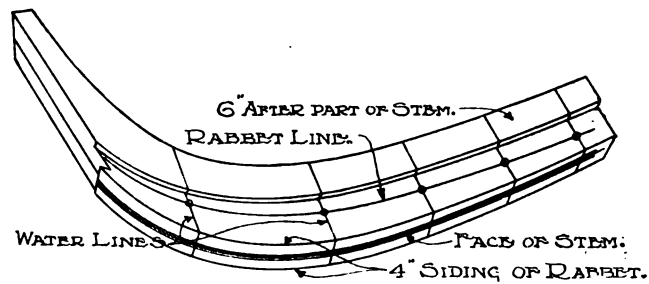
A steam box will have to be made for bending the frames and while at the job it is just as well to make it large enough to take in the garboards and broads which will require steaming.

Make the box 16 or 18 feet long by say 12 inches square. In making the joints on the box it is a good plan to put a piece of canvas between and screw down one plank upon the other.

For the steam secure an old boiler similar to that used in houses and plug up all holes except two near the top—one for filling it and the other for connecting to the steam box.

It may be necessary to make a mould for the forward frames and if this is done follow out the same idea as in the other in carrying in the top and bottom a couple of inches more than the plans call for.

It might here be remarked that if the frames are not bent at this stage it is likely to cause a delay later on, for



Stem Before Rabbet and Bevels are Cut

the longer they are left on the mould the better will they keep their shape.

The stem, keel, shaft logs, dead-wood are then gotten out.

For the stem get a hackmatack knee, making a rough pattern before purchasing it so that you get one the right shape.

It is shown sided 4 inches, but the siding aft of the rabbet should be wider or there will be only about an inch solid wood to nail against. This is done either by putting in an apron—a wide piece let into the stem and securely fastened to it—or by making it as shown in the accompanying sketch. For this get a 6-inch knee and lay out the face of the stem and cut it out to the line square across. Then lay out a center line, the face of the stem and the width, 4 inches, using a marking gauge from one side of the knee which has been planed up true. Next mark out roughly about where the rabbet is coming and allowing a half an inch more cut it down to the 4-inch mark.

If the rabbet is now laid off accurately and the side of the stem cut down from this line to the half siding of the face of the stem it will give a good line on the angle at which to cut the rabbet.

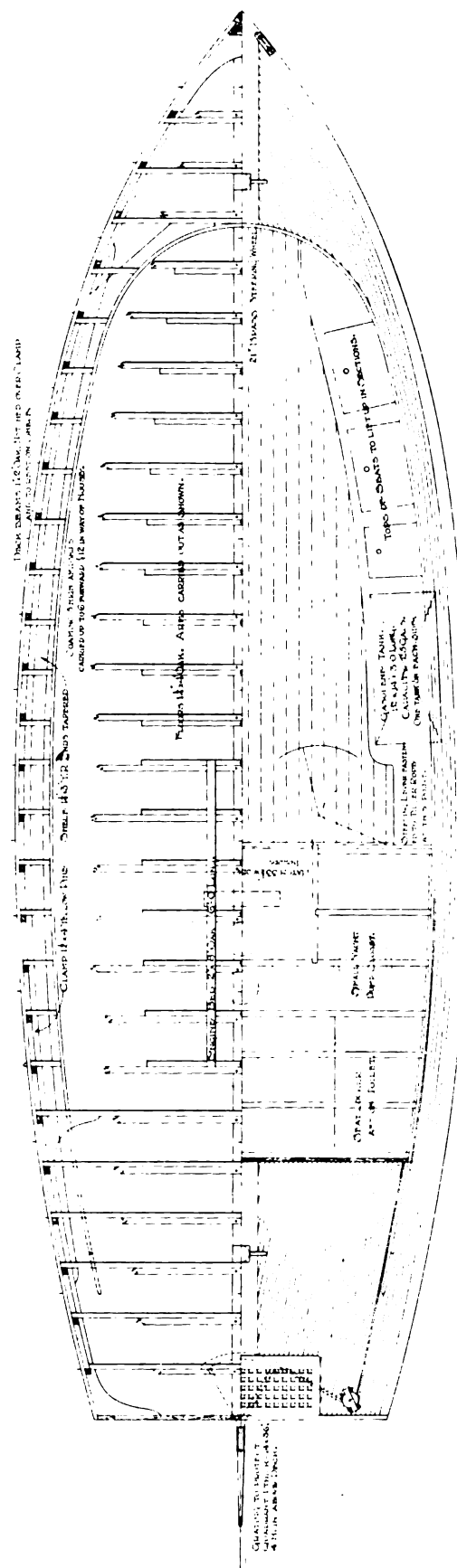
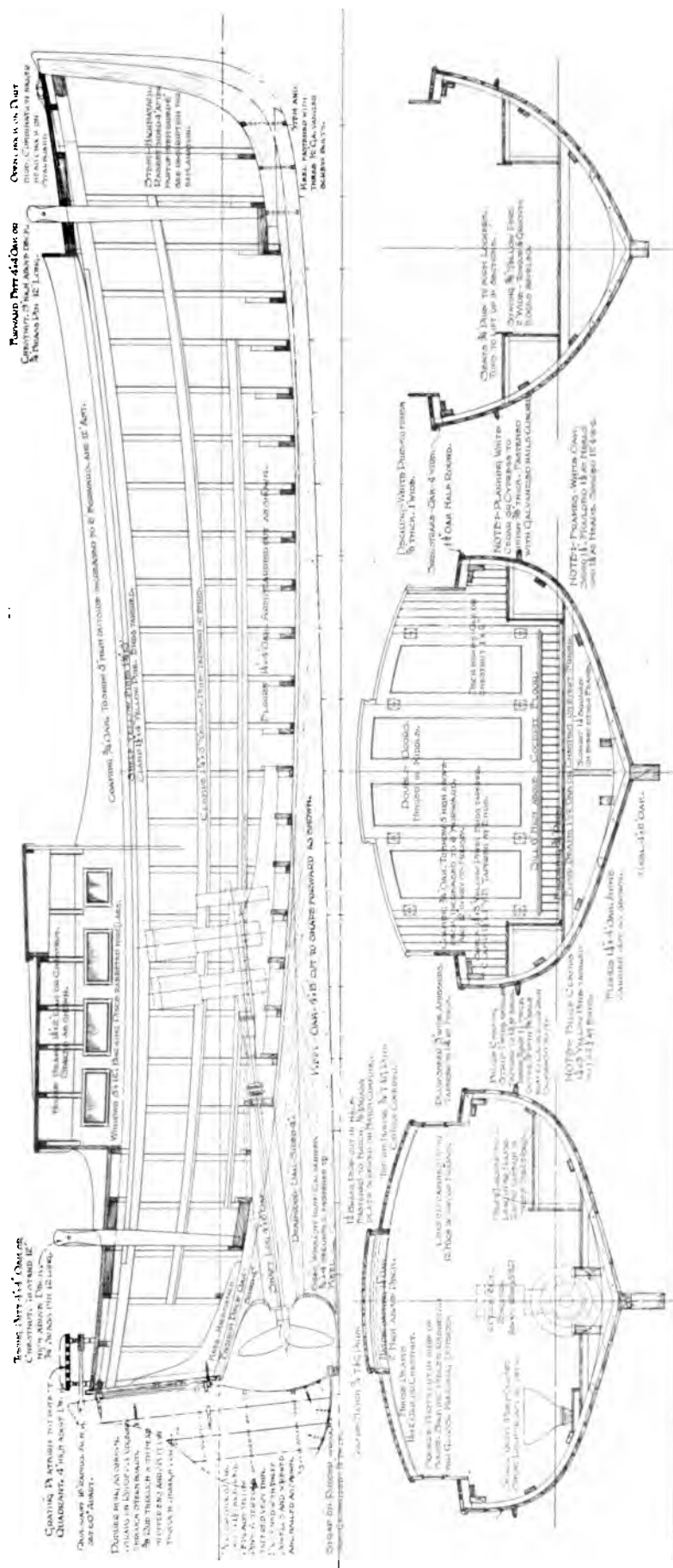
Now cut out the rabbet proper from the rabbet line in at a little more than right angles with the face just spoken of. Cut this in $\frac{7}{8}$ inch deep and then working from the after side of the stem cut out to the back rabbet making the face of this at about the same angle as the outside part of the stem.

The keel is gotten out of a 4 by 8-inch piece of oak in one length. The bottom of the keel runs straight from station No. 7 aft, so if a line is laid out 8 inches above it and continued forward parallel it will run out at the foot of the stem as shown in the construction plan. The top is cut out as shown and the bottom rounded up so that it continues in the fair line up around the stem.

The shaft log is also a 4 by 8-inch piece of oak and may be either bored out or made in two halves and bolted together. If the former is done the hole need not be bored until the boat is set up. If you have not had any



Inboard Profile of Whale Showing Engine Location



Construction Plans and Scantling Details of Twenty-Eight-Foot Service Launch, Whale

experience in doing this it is the best plan to have some one who has do it.

The filling piece is put on the keel and thoroughly fastened to it and then the shaft log is fastened on top of this, after which the fashion piece is put on.

The stern knee is then gotten out and thoroughly fastened to the fashion piece. Getting out the sternboard is next on the program. This is an inch thick and will probably have to be made of two or three wide pieces.

Probably the best plan is to glue these together as it will then be more easy to handle and to lay out.

Don't forget to allow for the thickness of the planking. A backing or nailing strip should be put all around the edge and should be thoroughly fastened to the sternboard.

The bevels for the edge of the sternboard may be gotten very closely from the lines on the floor.

The sternboard is then set up and thoroughly fastened to the stern knee.

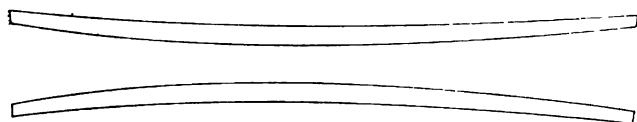
The whole backbone is then set up. The bottom of the keel blocked up to the heights as shown in the offset table. Make sure that the keel is lined up straight and that the blocking is firmly secured to the floor. Have part of this blocking project up on the sides above the bottom of the keel to prevent any side motion.

The moulds are then laid out. Four moulds should be sufficient, namely, on stations No. 4, 8, 12 and 16. For these use 1-inch spruce with one side dressed so that the pencil marks may be plainly seen. The simplest and most accurate way is to lay out the lumber so as to be sure that the outside curve will come in all right, fasten the top and bottom cross braces and lay it on the floor and the water-lines, etc., may be marked on it. Then from a center line marked on an upright fastened to the moulds lay out the widths, etc., allowing $\frac{7}{8}$ inch for the thickness of the planking. Draw a fair line through these points and saw out the mould.

The cross piece at the top should have either its top or lower edge at a height corresponding to the top of the plank-sheer.

The moulds forward of amidships should be placed so that the forward side is on the mark. The one on station No. 12 is placed directly on it and the one on No. 14 should have its after face on the mark.

Brace these thoroughly, preferably to the ceiling as it allows of a clear floor space when the planking is put on. Using a spruce ribband $1\frac{1}{4}$ inch by 2 inches bend it around the moulds so that its top edge comes even with mark of the top of the plank-sheer on them. Before fastening to the moulds be sure that they are square across the keel. This is done by making a center mark on the stem and using a light batten, mark on it how far from



Approximate Shape of Planking, Above, Around the Turn of Bilge, and Below

this point the edge of the mould comes on one side. Then try it on the other and move it until both sides are alike.

Put on about five more ribbands of the same size on each side, placing them in such a position that they take in the deepest round of the bilge and where it turns into the flat floor.

The frames may now be taken off the mould and fitted inside the ribbands. There will have to be a lot of fitting on this job—beveling off the outside edge, taking off the sharp corners inside, cutting off on the heel to make a good rest on the keel, straightening out a little here and there, etc. When they are fitted drive a nail through the heel into the keel and fasten them to the top ribband to hold them in place.

The floors should be fitted and fastened to the frames and keel. For the latter use a good lag-screw. Galvanized nails clinched will serve to fasten the floors to the frames.

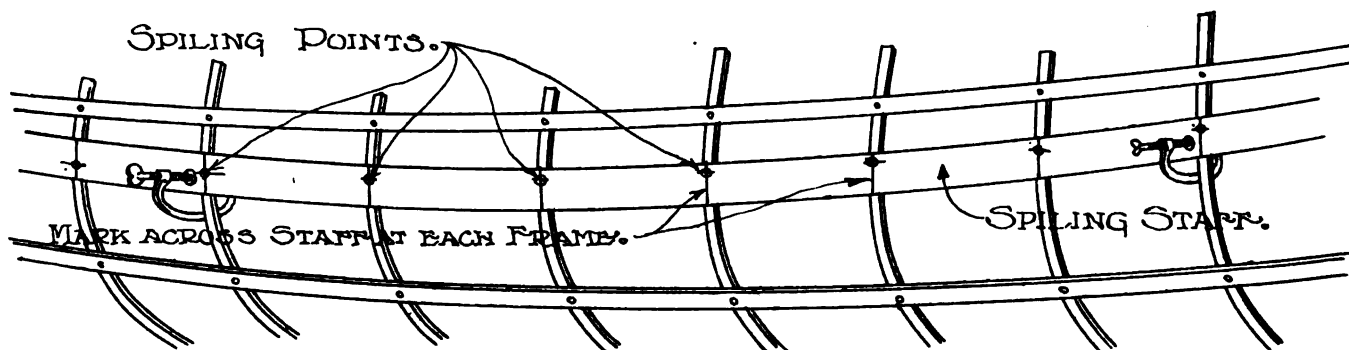
If the shaft hole is not bored yet it is well to do it at this stage as the guides may run the full length of the shaft log.

The engine beds should also be put in before starting on the planking. Their position in a fore-and-aft direction is governed by the size of the flywheel on the engine. The position of the engine as shown on the plans allows for a flywheel 24 inches in diameter.

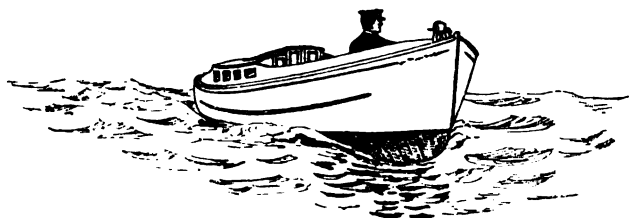
Spilings will have to be taken for all planks and it is done in the following manner—using a light plank say $\frac{1}{2}$ inch thick and about 6 inches wide, clamp it in several places, in the length of the boat, to the frames letting it spring fair. Don't push the ends up or down or try to force it in the middle.

Then mark a line across—with chalk that it may easily be rubbed off—at the ends and at each frame and with a pair of compasses set to the widest width between the spiling staff and the line we are working from—the sheer line for instance—prick off this distance on every frame—between too, if there happens to be a sudden bend—making a circle or other distinguishing mark so that they are not lost.

Then remove the staff and lay it on top of the plank to be used. It will have to be placed so that when the dividers are used again from these points they come



Showing Method Used in Taking a Spiling



within the board for its entire length. Draw a fair line through the points just marked.

Lay out the approximate widths of the planks on the stem, midship mould and the sternboard. Mark these widths on the plank—from the spiling points—and draw a fair line through them. The plank is then sawed out and the edges planed up. Probably the easiest way for the amateur to get the bevels is to clamp the plank on the boat as close to the plank above as possible and setting the compass to the greatest width between them—either inside or out as the case may be—and mark along the entire length of the board. The plank is taken off and planed to this mark and it should then fit if the work has been done carefully.

One thing should always be borne in mind. If the seams are to be open anywhere it should be on the outside. The seams should be wedge shaped so that in driving in the cotton the harder it is driven in the tighter it gets, while if the seam is open on the inside the cotton simply is pushed through and there is no way to hold it in.

The method of fastening the planking to the frames is of course optional. The difference in cost being between about 7 cents for galvanized and about 30 cents for copper nails and that it takes about twice as long to rivet up the copper nails, while the copper nails may be clinched as they are driven in.

In either case a regular boat nail—wrought in galvanized and cut in copper—is preferable to a wire nail, as being slightly tapered and not so smooth they draw up a great deal better.

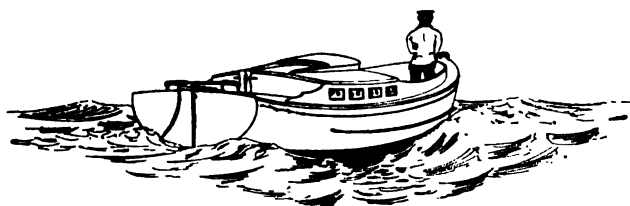
In putting on the planking the binder, as the first plank below the sheer-strake is called, should be put on first. Three or four more plank should then be put on below this. These planks will then hold the boat in shape and the moulds may be taken out and tie pieces fastened on every third or fourth frame.

The clamp and shelf are then put in. The clamp should be riveted through the frames and the shelf to the clamp between frames.

The bilge clamps are also put in at this stage and riveted through the frames.

The sheer-strake is next put on and the planking finished. Of course a boat of this size is too heavy to turn over to put on the bottom but it may be laid over on one side to do this.

When the planking is all finished and smoothed up the deck should then be put on. The wearing strip on the bilge should be put on before proceeding further. It is fastened through planking and frames with either rivets or galvanized bolts.



Forward and aft of the cockpit and house the beams run from side to side. As indicated on the construction plan, they are $1\frac{1}{4}$ by 2-inch oak or chestnut, and should have a crown of about 5 inches in 9 feet.

In the way of the cockpit they are only long enough to make the deck 8 inches wide from the outside of the plank-sheer to the outside of the coaming. These rest on the shelf and are fastened to the head of each frame.

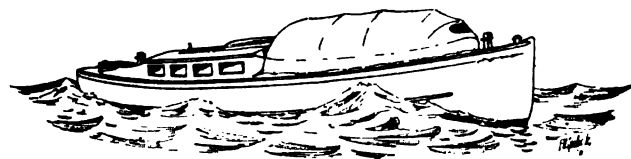
All deck beams should notch about $\frac{3}{8}$ inch over the clamps.

In putting on the deck the plank-sheer is first fastened on. This is fastened to the sheer-strake with galvanized screws. If the facilities are at hand this should be steamed and bent around to shape. If not it will have to be sawn out of very wide planks. The dimensions for the plank-sheer are shown on the construction plan.

The rest of the deck is then bent around inside of this. It should be in narrow strips and care should be taken so that the grain all comes up in one direction. This will be found a decided advantage in planing off as a much smoother job is done this way.

The bitts should be put in and thoroughly fastened. A pin is put through it just below the blocking under the deck to prevent any possibility of its coming out.

Before putting in the coaming the engine should be put in and lined up and the house and cockpit floors built in, after which the toilet, on the forward, starboard side of the house should be placed in position and all necessary connections made.



The exhaust pipe, muffler, etc., should also be arranged and properly fastened while there is yet elbow room to work in.

After the cockpit floor is in the tanks should be put in and thoroughly braced and all connections made in such a way as to be easily gotten at.

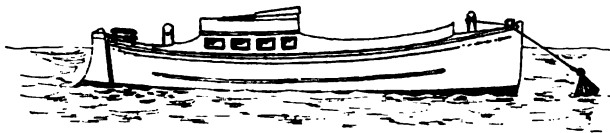
The seats are then built in both in the house and in cockpit. The fronts of the seats are made of tongue-and-groove pine and the tops made so that sections of it which should be hinged on their back edge may be lifted up giving access underneath for locker space.

It will require some $\frac{3}{4}$ -inch oak about 9 inches wide for the coaming around the cockpit. This will have to be well steamed and bent around to shape. The forward piece should be about 16 feet long and where the butts come it should be joined to the wide pieces on the sides which form the sides of the house. These should be 12 inches high above the deck in the way of the house being cut down aft about as shown and forward in a fair curve until it meets the forward piece. Do not cut this down too abruptly forward or it will give the boat a broken-backed appearance.

The windows in the sides of the house are cut out square and a backing frame fitted inside. This latter to be rabbeted out for the glass and screwed to the house sides. A moulding with a rubber gasket between it and the glass is nailed outside in the opening.

The house beams are then put in and the framing for the companionway laid out.

The after end of the house may be of one piece of



oak with holes cut out for two round ports—one in each end about 15 inches from the side of the house.

The staving on the forward side is also put on and this forms a support for the beams which are cut off for the hatch. This staving should be carried up about 6 inches across the front of the house to form a sill for the doors.

In putting on the roof, pieces 4 inches or 5 inches wide may be used as it should be canvas covered to make a tighter job.

In making the hatch, the fore-and-aft pieces on which it slides should be $1\frac{1}{4}$ inch thick and about 3 inches above the deck at the forward end, being tapered to about $1\frac{1}{2}$ inch at the aft end.

The slide itself is made of tongue-and-groove stuff with two cross pieces underneath and is held in place by a brass clip. This is made by sawing a $1\frac{1}{2}$ -inch brass pipe in half—lengthwise—and fastening a piece on each side. It should be the full length of the hatch. The fore-and-aft piece is rabbeted out to receive the brass slide as shown on the construction plan and has a brass plate its full length on which the hatch slides.

The doors are double on each side, being hinged in the middle. The inner doors are one-half the width of the hatch or $16\frac{3}{4}$ inches wide and the outer ones 18 inches, so that the inner ones may be folded back and the outer ones swung open against the seat and held there with a catch, making the cabin practically open at the forward end.

The rudder should now be made. As indicated on the plans this is made with an oak piece on the forward edge and the rest of the blade yellow pine fastened together with galvanized dowels with a head hammered on both ends. The rudder is hung on two eyes through the stern-board and two gudgeons on the rudder with a galvanized iron rod through them.

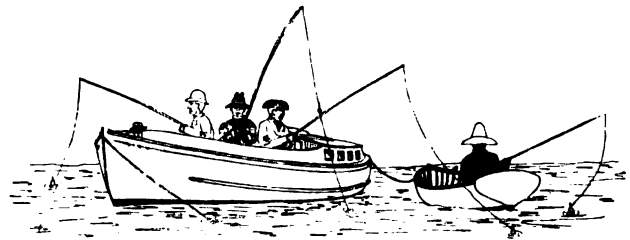
The skeg is of wrought iron galvanized, shaped as shown and thoroughly fastened to the dead-wood. The strap on the lower part of the rudder is also wrought iron galvanized.

The quadrant for the rudder should be made of bronze and a pattern should be made for it for the casting. It should be made to fit over the rudder head, the latter being cut down to form a shoulder, and a pin is put through the quadrant to prevent it from jumping off.

The tiller ropes from the quadrant should lead through a sheave on the deck on each quarter and then through the house, the leads being fastened to the coaming.

Forward of the house it may be led under the deck to the forward end of the cockpit where it comes across to the drum on a 21-inch brass steering wheel.

If desired a steering lever may be attached to the



tiller ropes just forward of the house so that the man operating the engine may also steer the boat.

A grating 14 inches wide by 3 feet long has been placed aft over the quadrant to protect it when towing. This should have traveler on the after edge under which the towing line is passed.

This is to prevent its slipping off every time a turn is made.

The engine best suited for this hull is probably a two-cylinder two-stroke machine of about 15-h.p. turning up somewhere in the neighborhood of 450 r.p.m. and with a 24-inch wheel—this is all the draught permits—with a 28-inch pitch should drive the boat between 9 and 10 miles an hour. The engine shown in drawings is a reversing two-stroke machine which should meet the requirements for a craft of this type.



IN THE TRACK OF THE TRADES

Lewis R. Freeman

PART V—(Concluded)

Hawaii to San Pedro

THE two weeks spent ashore during Lurline's return visit to Honolulu were a welcome respite from the four months of unbroken life on shipboard. The absence of the passengers was taken advantage of to give the yacht a thorough overhauling in preparation for the long, hard beat back to San Pedro, especial care being taken in the renewal of the running rigging. Moreover, as we were also scheduled for a short stop at Hilo and confidently expected to run down with a fair wind and arrive there all ready to receive callers, unusual attention was given to brass-work and hardwood. Thus our plans; how they worked out will appear presently.

On the evening of August 4th the yacht club gave a banquet for the men of Lurline's party at the Royal Hawaiian Hotel, among other amenities of the occasion being the election of the Commodore to an honorary membership in that organization. In his speech of acceptance the Commodore dwelt at some length on the ideal sailing conditions existent in the Trade latitudes of both North and South Pacific, and suggested, as a means of bringing those waters more closely to the attention of coast yachtsmen, the inauguration of an annual race, in one direction or the other, between Honolulu and one of the California ports. The idea was not an entirely new one to Hawaiian yachtsmen, but the Commodore's assurance of the hearty cooperation of the South Coast Y. C. of San Pedro gave the movement an impetus which culminated, in the Summer of 1907, in the first Trans-Pacific Yacht Race. This contest was repeated in 1908 and is now, it is confidently hoped, an established fixture, though the expense in time and money to the participants will probably result in its becoming a biennial instead of an annual event. Too much credit cannot be given to the people of Hawaii, both in and out of yachting circles, for the enthusiastic sportsmanship which has made this splendid contest possible.

At this banquet, also, were arranged the details for a match race between two old rivals, Tom Hobron's sloop, Gladys, and Clarence McFarlane's schooner, La Paloma. It was decided that the yachts should run down to Lahina, on the Island of Maui, remain there for a day or two and then race back to Honolulu. As the date for the start, August 10th, about coincided with that on which we were planning to sail for Hilo, and as Lahina was but little off our course, the opportunity of following the race was too good to neglect. Accordingly a party of our friends was asked to accompany us, and preparations made to start the ball of pleasure rolling with a musical send-off in Honolulu and stop it, at the disembarkation

of our guests in Lahina, with fireworks. On the arrival of the racers at Lahina—of course Lurline would arrive first—our friends were to go ashore to await the steamer home, while we proceeded on to Hilo. Never was a schedule so carefully elaborated—even the gastronomical preferences of each individual guest had been consulted—and never did a party of guests board a yacht with such firm intentions—expressed and implied—of enjoying, unmixedly and uninterruptedly, a really good time.

The water-front was gay with flags and black with people when, early in the afternoon of the 10th, we hove up anchor and filled away for the passage, following in the wakes of Gladys and La Paloma. It was "Aloha, Aloha Nui," from every pier and dock and bulkhead that we passed as we stood down the bay, and "Aloha, Aloha," from every tug and sloop and schooner. On the landing of the boat club, at the inner end of the passage, was a big crowd of friends with the band, and from there the "Alohas" again burst forth as we sailed smartly by, running at an easy five or six-knot gait before a light but steady trade. As the yacht entered the passage and made her first curtesy to the ocean swell, the band struck up the regulation "Aloha-oe" and the crowd, falling silent for the moment, vented its feelings in a flood of waving handkerchiefs. Simultaneously, a similar muslin broadside flashed forth in reply from the port rail of the speeding yacht, and then, with friends looking in the eyes of friends and the whole affair—even to the music—going off as smoothly and dramatically as Lohengrin's Farewell in an end-of-the-season performance, the lashing of the fishing-tackle block on the forestay parted and let the anchor and 35 fathoms of chain go splashing back into the sea.

An atmosphere histrionic gave way to one profanely sulphurous, for in addition to spoiling the dramatic effect of our departure, the contretemps left the yacht in a really awkward position. The wheel was thrown hard down and mainsail and foresail sheets let go with all possible dispatch, but not in time to prevent her from rollicking on to the limit of her cable and bringing up short like a colt at the end of his tether. Then she swung round, head to wind, and began tugging at her anchor as the colt tugs at his halter in trying to slip it over his ears. While the sailors wound away on the winch in the thin, blue smoke that still hovered forward—the mate had lost a good deal of flesh and skin from the inside of his hand in trying to check the cable—our amiable guests brought up sofa pillows on the quarter-deck and, making megaphones of their hands, held

long and animated conversation with their friends on the landing of the boat club.

Getting underway in the narrow passage was by no means a simple operation, but, thanks largely to a favorable set of current, it was accomplished without accident. Gladys and La Paloma were something more than hull down to the South by the time we were clear of the reef, but with a fair wind which was increasing steadily as we worked from under the lee of the land, it was hoped to overcome their lead in time to give our guests a good view of the race. Lur-line gained rapidly while daylight lasted, and by the time the banners of a gorgeous sunset fluttered out in the West and Tantalus disappeared behind the dusky pall of the coming night we seemed in a fair way to accomplish our purpose.

Never was there such a night; never so jolly a yachting party. The slow-heaving sea, bathed in a flood of moonlight, was a-dazzle in dimples of liquid, lucent gold; the sky was a star-set vault of purple, and the breeze, milk-warm and redolent of the smell of some distant flower-clothed valley, a caress from heaven. The temper of the party matched the night.

Dinner was a huge success. There were a few negligible incidentals of the soup, fish, roast and salad order, preliminary to a huge feast of preserves made from every known variety of Hawaiian fruit from mangoes to mummy-apples, sugared down in jars at every conceivable stage of ripeness and unripeness. These, with countless boxes of candy and fresh fruit, were the contributions of our guests and their friends. And how we did eat, and drink each other's healths, and with what acclimation agree that, never since the voyage of the Argonauts, had cruise been so auspiciously begun. Banjos and ukuleles were a-twang and a-tinkle on the after deck, accordions and a bugle wailed and brayed from the forecabin, and through it all ran a fog-horn obligato played by a festive Hawaiian miss who had unearthed that instrument of terror from its corner in the lazarette.

About 10:30 the wind died down and the yacht, deprived of its steadying influence, fell more and more under the disturbing sway of the swinging swells from the channel. Before long a decided current became apparent, running with the seas and setting us rapidly toward the rocks of Makapu-u Point. At 11:30 Diamond Head Light, which is arranged so as to change color to the ship passing shoreward of the danger line, showed in a solid beam of warning red. And still the yacht continued to drift, with the land looming higher and the ominous roar of the surf on the reef growing louder every minute.

From rolling but gently when she first dropped the wind, the yacht, in the wrench of the steeper seas nearer shore, was shortly executing a pas seul of singular intricacy and animation; so that our guests—frankly, openly and unfeignedly seasick, every one of them, from a half-hour of fear that they were going to be cast on the reef and drowned—relapsed into an indefinite period in which they were afraid that perhaps nothing of so comparatively felicitous a nature as drowning was going to befall after all. Bundling the sufferers below as gently as the exigency permitted, the boats were cleared and swung out ready for launching. Towing off, in the face of swells and current so persistent, held scant promise of success,

but we were about to try it as a last expedient when the sails began filling with vagrant puffs from a waking tradewind and we slacked off sheets and got away without putting it to the test.

The rest of the night we spent in crabbing across the lumpy channel, to come out in the gray dawn upon a windless patch of current and swell-churned water in the lee of Molokai which, of all fiend-infested corners of the Seven Seas, is the spot most accursed. Steep, viciously-heaving humps of water, wallowing without rhythm, wrangled angrily to see which could pitch or roll the yacht farthest in its own particular direction. She was like a kitten thrown to a pack of hungry hounds; pulled, hauled, rolled, dragged, tossed on high, and trampled underfoot. Not all the other rough and rowdy intervals of the whole cruise crowded into a single day could have compared with it for the sheer discomfort it imposed. All but two of the sailors, and the cook as well, were violently seasick; only a couple of us of the regular guard of Lur-line were holding up our heads, and the guests were a unit of prostrate despair. Not a bed nor a bunk on the yacht was tenantable in the fearful rollings; no bed or bunk less than a covered box could have been. Everything not screwed or lashed into place sought the lowest level, and a survey of the cabin, looking forward from the foot of the companionway, suggested something between the aftermath of Belshazzar's Feast and the Kishneff massacres. Banjos, ukuleles, fog-horn, no longer thrilling to the touch of the revelers, complained intermittently with muffled chords of protest as they rolled drunkenly to port and starboard with the lurches of the yacht. And the revelers themselves—but the Hand of Charity throws the Helm of Description hard-a-lee and sends us off before the Wind of Pity on another tack.

We have since estimated that this slap-banging ten hours of devil and the deep-sea in the lee of Molokai did more damage to the yacht's rigging than all the four months of cruising South of the Line. Most of this became apparent in subsequent overhauls; at the time the principal trouble arose through the repeated carrying away of the boom-tackle. This happened four times: once through the splitting of the block, a flying fragment of which narrowly missed decapitating the man at the wheel; once through the tearing loose of the cleat on the boom; twice through the breaking of the wire lashing on the boom. How the yacht escaped being racked to pieces in the crazy tug-of-war between the keel, on the one side, trying to hold her to the normal, and on the other the waves, savagely bent on throwing her on her beam's ends or standing her on bowsprit or rudder, must always remain a mystery.

At four in the afternoon a light breeze sprang up from the South. We were still somewhat nearer to Honolulu than Lahina, which, with the fact that the wind was fair to the former port and dead ahead to the latter, quickly decided us as to what our course would be. Under all-plain lower sail we made the 32 miles to Diamond Head in three hours and a half, to fail—probably on account of the hour—in our endeavor to attract a pilot. Finally we were forced to lower a boat, which, with some difficulty, got through the reef at Waikiki and landed a man to telephone for a tug. Waterwitch came out in due time and towed

the yacht to her old anchorage in Rotten Row. Our guests, as fast as they revived, went eagerly ashore. Gladys and La Paloma, as we subsequently learned, after nearly going ashore on Rabbit Island the same night that Lurline was threatened with similar disaster on Makapu-u Point, continued the race to Lahina, Gladys, as usual, winning.

On the forenoon of the 13th, after a day spent in effecting such repairs and renewals as were absolutely necessary, we again set sail for the Island of Hawaii. We left with the intention of proceeding to Kawahaie, on the leeward side of Hawaii, to there pick up a friend whom we had planned to have with us in Hilo. A glance at the chart, however, revealed the fact that the course to this point would expose us to possible calms in the lees of Molokai and Maui, and the idea was promptly given up. So we sailed the windward course and even by that met weather which dragged out to over three days a run which we had hoped to make in little more than one. At 3:30 in the afternoon of the 16th we were off Hilo harbor, but unable to enter for lack of wind. An anchorage was finally reached at the end of a tow-line kindly passed us by the freighter, Charles Councilman.

We remained in Hilo five days, renewing old acquaintances and allowing the crew opportunity to still further repair the ravages of that night of accursed memory in the lee of Molokai. The bay, with its mile or more of exposure to the Northeast—the quarter of the prevailing wind—was as uncomfortable as ever to lie in, the yacht, without sails to steady her, rolling and pitching much of the time more violently than in the open sea. Fortunately there was no heavy weather of the kind that throws up a line of surf across the river entrance and occasionally makes it impossible to land in boats for days at a time. Hilo harbor is badly in need of the \$600,000 breakwater appropriation recommended by the Government engineers.

At 11:30 a. m. on the 21st Lurline left anchorage in Hilo homeward bound for San Pedro. Close-hauled on the starboard tack to a light E.N.E. wind, we stood out of the harbor, dipping to several steamers and sailing vessels whose crews lined up to give us good-bye cheers as we passed. Outside the wind was coming in weighty gusts, and a rumpled, squally-looking Northeast seemed to give the lie to a barometer that was soaring optimistically around 30.05. The instrument had its way, however, for the squalls worked off inland in a couple of hours, leaving us with a steady E.N.E. wind and a brilliant fair-weather sky full of cottony trade clouds. At three o'clock, when we took departure with Alia Point Light bearing S.W. $\frac{3}{4}$ W., six miles, a course of N.N.E. was set, to be held with scarcely a quarter of a point's deviation for four days.

On the 23d two steamers were sighted heading S.S.W., probably for Honolulu. These were the first ships seen in the open sea since leaving San Pedro, over six months previously. Several days later a bark was sighted; these three confused blurs on the horizon, all of them too distant to signal, were the nearest approach to company the yacht knew during the entire cruise. Probably no other circumstance could so strikingly illustrate the utter loneliness of the mid-Pacific. Anywhere south of Hawaii off the tracks of the two Australian-American steamship lines, the crew

of a disabled ship might float for ten years—or ten times ten years—without smoke or sail breaking the smooth line of the horizon.

Early in the morning of the 25th the watch reported a lunar rainbow and all hands, fore and aft, tumbled out on deck to view the unusual phenomenon. The full moon was shining brightly from a clear sky off to S.W. by W., having sunk to about 30° from the horizon. Up to Northeast a fluffy bank of dove-gray clouds was heaped up halfway to the zenith, and against this, an unbroken arch of mother-of-pearl, the rainbow stood clearly forth. From red to violet, all the colors of the spectrum were there just as in a solar rainbow, yet shining with a light elusive and unearthly where the spectral hands that fashioned it had woven a warp of moonshine into the woof of its blended iridescence. Twice it faded and reappeared before dissolving for the last time in the first flush of a sparkling daisy and daffodil sunrise.

For some days after leaving Hilo the wind held steadily from the Northeast, forcing us several points to the North of a direct course to San Pedro. Crowded close on the wind all the time the yacht made slow headway, averaging but little better than 120 miles a day. On the 26th, however, the wind veered to Southeast, and on the three days that it remained in that quarter runs of 143, 188 and 176 miles, respectively, were registered. This was followed by a spell of calm, and that by a succession of days of varying, uncertain weather and head-winds, which held all the way to San Pedro. Most of this latter period the wind was moderate and the sea light, as is evidenced by the fact that both fore and main gafftop-sails were carried, day and night, from the afternoon of August 24th to the morning of September 4th, ten and a half days.

In the evening of September 3d, at about Lat. 34° North, Long. 133° West, we encountered our first fog, and from that time on were hampered more or less by thick weather all the way to port, which we reached a week later. The brilliant tropical days of sunshine and squalls succeeded to dull temperate days of much cloudiness and little wind and rain. Some days the fog was high and troublesome only in making observations impossible; on others it settled down close to the sea in banks so dense that the main truck was not visible from the deck. On these latter occasions, though it is not likely that there was another ship within 500 miles, prudence had the call and our little hand-cranked fog-horn was kept incessantly at work.

Between fogs and light and baffling winds, our progress for the last half of this run was slower than for any other similar period of the voyage. On but three of the last nine days did the yacht log over 100 miles, these being the 4th of September, 141 miles; the 5th, 153 miles; and the 8th, 150 miles. The runs for the other five days were 26, 46, 47, 87 and 67 miles, respectively. The winds, for the most part, were Northeasterly, but the comparatively good run of the 8th was made with a very light but steady breeze from the West.

Several land birds came aboard on the morning of the 10th, and not long after the brown slopes of Santa Rosa Island took shape through the lifting fog. The heavens were overcast all day, but for a brief

space in the afternoon a long strip of cloud ran back across the East like a sliding door, and through the rift we had a brief glimpse of the rugged masses of the Sierra Madres, 100 miles distant, standing sharp and distinct in a flood of sunshine against a vivid background of California sky.

Doing the best we could with puffs of wind that came by turns from all points of the compass, we crept along at three and four miles an hour until midnight. Then it fell dead calm, and during the next eight hours the log recorded but a single mile. This was broken by a light Westerly breeze and before it, wing-and-wing, we went groping in through

the fog, watching for a landfall that would give us our position. This appeared at 11:50, when the familiar cliffs of Point Vincente began showing in dark brown patches through the thinning mist off the port bow, distant about five miles. Thereupon the course was altered from E. by N. to E. by S., and three hours later the Commodore was able to close the log of Lur-line with the following entry:

September 11th, 3 p. m.—Anchored near our old mooring in San Pedro outer harbor, having been away seven months and seven days, traveling 13,500 miles without accident or serious trouble.

(The End.)



HURRAH'S NEST



"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



MORE VIPER

Did you ever ride in a Viper, especially, that is to say, in a tiny chop of a sea? If you ever did you will realize how I feel after reading Mr. Hickman's comment on my innocent remark about our 12-foot cigar-box running rings around our Viper. If you never did ride in one I'll explain my feelings by likening myself to a small boy being spanked with a shingle cut from a 2-inch oak plank,—every wallop a kick that jars your whole system.

And Mr. Hickman is dead right in the matter,—from his point of view,—for Viper is the fastest and most seaworthy boat on record, at the price. Given a maximum of fifty dollars to spend for a hull and another fifty dollars to spend for a worn-out, second-hand engine (I think I am right in this assumption regarding his power plants, for if my recollection of his many articles is correct all his experiments were made with engines incapable of developing more than 60% of A. P. B. A. ratings)—given this combination and in her price class Viper cannot be beaten.

But his assertions regarding our 12-footer and our statements concerning that little boat are wrong,—wrong as h——. To quote Mr. Hickman for a line or two, he says: "In an engine company's advertisement we read 'You don't have to build a big hull to get speed if your engine is right.' This is a most misleading statement * * *." And in the second paragraph, after reciting the high speeds attained with small hydroplanes in Europe, he contradicts the sense of this by stating: "The weights of the English 13 and 14-footers run along at from 450 to 550 lb, including hull, engine and everything complete." Exactly right, Mr. Hickman; where in thunder would one of these little ones go if your 17-h.p., 500-lb engine were dropped into her bow?

You see Mr. Hickman is shooting at one target and we at another. We believe it ruinous to sport when in order to go after the real speed trophies a man must in-

vest a fortune in a big hull and several hundred horsepower; and our 12-footer is only one of a series of a dozen experimental hulls tried by us last year with the idea of securing tremendously high speed at a moderately small outlay.

But, Holy Sailor, Skipper, I'd like to know just how you expect to square yourself and the Elbridge Engine Company with readers of THE RUDDER all over the world.

You have been selling us advertising space in THE RUDDER for the exploitation of our idea that economical speed means power for weight. That idea has seemed so reasonable to your readers that we have sold light, high-speed engines to Rudderites all over this country, in Buenos Aires, in Alaska, in Montevideo, in Mexico, in Madagascar, in Straits Settlements, in South Africa, and in all sorts of out-of-the-way places. They and we were feeling fine about it all, when along comes Mr. Hickman explaining that they could travel faster with what he suggests is a second-class old plug of a heavy engine than they can with twice the power at half the weight.

It makes us feel pretty cheap to read in clear print that with Mr. Hickman's kind of engine turning a 17 by 24-inch propeller at 1,040 r.p.m. Viper is faster than with our kind turning a 17 by 32-inch propeller at 1,175 r.p.m.—to discover, in other words, that when he is turning a 17-inch propeller at a pitch speed of 23.8 m.p.h.,—not to mention carrying 300 lb of extra weight,—his Viper is making better time than our Viper turning a 17-inch propeller at a pitch speed of 37.8 m.p.h. Evidently, in order to beat Mr. Hickman's Viper in a race we should have to cut out one of our three cylinders and carry a couple of grown men in the bow of our Viper. It would not be, according to accepted practice,—but surely figures cannot prevaricate! Here are the facts and what else can we make of them.

Certainly there is a screw loose somewhere, and in order to get as near as possible to brass tacks it may be

well to state under just what conditions we made our time trials; Mr. Hickman can stack the data against his own and then we shall see who is fooling himself.

We bought our Viper parts in "knockdown" form from the Bath Marine Construction Company, and they were assembled in our shop by a man who has spent the past twenty years on boat work. He checked off every foot of the boat from Mr. Hickman's plans as published in *THE RUDDER*. We didn't care much for the steep angle of the engine bed, but we left it as prescribed, with the engine's flywheel sticking up in the air. The engine was installed without reverse gear, the propeller being keyed to the shaft, and the shaft coupling keyed to engine and propeller shaft. (No chance for engine slip.) We used four kinds of propellers, Columbian, Bryant & Berry, Harthan, and the Michigan Wheel Company's "Dixie." The diameters and pitches ranged from 18 by 24 inches to 16 by 37 inches,—about a dozen of them all told. (Incidentally, we did not rely entirely on the marked pitches, but had some of them measured.) Our propeller speeds were indicated at the bulkhead at all times by a Warner shaft-speed indicator, specially calibrated for us and frequently checked off against a Veeder revolution counter. Our course was marked off in the basin of the Erie Canal, near our factory, where we have a straightaway one mile three hundred feet long, government survey, which we have measured both ways; and an oblong course of as nearly two-thirds of a mile as a surveyor could lay it out; and we keep two fairly accurate split-second stop-watches for this particular business. Two different engines were installed, first a three-cylinder "Featherweight," which maintained between 33 and 34 b.h.p., and which weighed, stripped, less than 150 lb., and later a four-cylinder "Featherweight," developing a fraction more than 48 b.h.p. and weighing, stripped, 178 lb. So far as possible the human element was removed from these experiments, and we made from 21, at worst, to about 23 miles per hour, at best. The exact figures are not by me at this writing, but Mr. Horatio Page of *THE RUDDER* rode with me one day when we clocked Viper somewhere in this neighborhood.

Early in the year we thought Viper must be good for at least 25 m.p.h. with the three-cylinder engine, and there are a number of people who would laugh at the idea of her being any slower than that. Reasons being: Just about the time we had Viper screwed together a man 'phoned us that he wanted a boat to win a cup on a summer-resort lake near Rochester. We asked him what he had to beat, and he told us one sure enough 18-mile boat and a new one said to make twenty or better. We told him we had no racer we could afford to send after a county fair cup but that the 20-mile Viper probably would make a show. To make a long story shorter, we shipped the boat to him and he had to stand the laugh from twenty or more men who helped take it from the train.

"Just wait," said the farmers, "until Comet gets after that shoe-box,—bet you a dollar to a good cigar you don't finish one, two, nine."

Now the only tank we could find for Viper was one that had lain open in a barn all Winter, and consequently was half-filled with chaff. It had been "borrowed" surreptitiously from a launch that had come in for overhauling and whoever borrowed it had not waited to examine his bargain. Result, Viper sputtered and went out just before the scratch race to determine handicaps, and

the agricultural gentlemen and their ladies gave their attention to watching the racy-looking 18 and 20-milers aforementioned wrestle for first honors about a mile ahead of a fleet of twenty "put-puts."

Viper was not eligible for the handicap, so we spent the time while that was being run trying to discover what ailed our carbureter. Meanwhile Viper stock had dropped 'way below par. Every once in a while we got a carbureter full of gasoline and then she jumped out of water; but most of the time we were sputtering and tinkering. Finally we discovered the cause of our trouble, and asked for the postponement of the Grand Cup event until we could clear the tank. We were generously allowed ten minutes! That gave us just time to break the pipe loose at the tank and disconnect from the carbureter, blow most of the chaff from the pipe, get some of it away from the opening in the tank, and patch things together again when the gun was fired.

We started a couple of hundred yards behind the local sky-rockets, which did not worry us half as much as the fact that the flow of gasoline was so slow we drained the carbureter in a few seconds every time we opened the throttle wide. The course was down the lake for a mile and a quarter from the start opposite the picnic grounds, back over the course and then up and back another mile and a quarter in the other direction, an alleged total of five miles.

With the throttle two-thirds open and spark retarded we met the challengers just short of the finish line. We had covered the entire course while they were doing a little more than half of it. Without having had, up to that time, any accurate figures, we surmised that Viper must of necessity be nearly a 40-miler. However, the judges gave us a time for five miles of less than thirteen minutes, or nearly 24 m.p.h., running nowhere near full engine speed! The trouble was that with new tank, more power, and every favor of smooth water we never could do it again. Perhaps Mr. Hickman could tell us why.

He is quite right about the seaworthy qualities of Viper as compared with our little orange-box he calls a hydroplane. Maybe it is a real hydroplane; but when my brother ordered it he told a boat-builder who never has seen a hydroplane to build him a flat-bottomed boat 12 feet long, with 4 feet beam at the stern and for 4 feet forward of that, and to taper it to a point. The bill for the completed boat, painted and fitted, f. o. b., was about \$67.50. But Mr. Hickman is dead wrong when he intimates that any old engine could have been successfully used in that boat; his 400-lb engine would have sunk it immediately. As for speed, with a four-cylinder "Featherweight" the 12-footer is a flying machine. We tried it once, and no one had courage to do it again in our restricted waters, for when the engine started Mr. Boat jumped out of the water, flew across the basin and landed on the tow-path before the would-be navigator could get his breath.

When he talks about size for size, why, Elbridge V, a 22-footer with nearly 5 feet of beam, with 40-h.p., would leave Viper with the same power so far behind in a day's run it would take Viper two days to catch up, providing the crew of Elbridge V went into camp.

LYMAN J. SEELY,
Elbridge Engine Company.

Rochester, N. Y.

SOME SCENES ON THE ROUTE OF THE VENICE-ROME RACE



Rome from the Tiber. Finishing Point of the Venice-Rome Race



View of Ancona from the Cathedral



The Harbor of Brindisi



The Castle of Aci Castello



The Harbor of Messina After the Earthquake

SAILING ON TROPICAL SEAS

Harry H. Dunn

PART III

ONE cannot leave Manzanillo without a feeling of regret. It is such a snug little port, beautiful in the Winter months, hot in Summer, but a sort of entranceway to the Land of Dreams, which seems ever to lie just within the boundaries of Mexico. Outside the harbor of Manzanillo there are fine sailing grounds, and were there such things as yacht clubs in Mexico, without a doubt there would be one at Manzanillo.

I left Manzanillo for Acapulco on a two-masted fishing and coasting schooner, one morning in December, stipulating, first of all, that this was to be purely a commercial trip, that there was to be no market fishing, and the voyage the full 300 miles to Acapulco. If one does not stipulate carefully all the terms of an agreement with these natives, either afloat or ashore, he will have to come to their terms afterward.

My payment for the journey, the use of the boat and three men who handled her, was to be five pesos a day. This is \$2.50 per day, American currency. The boat was about 55 feet in length, possibly 60, counting her overhang at the stern, and, though native made, was thoroughly seaworthy, answered her helm well and was admirably handled by the captain of the gang.

This captain was as tough-looking a bandit as one could wish to see outside a melodrama, but he proved honest,—as honest, that is, as could be expected of a man who had never heard the word, knew the country and was anxious to please me. A better man to work I never knew, but he had only one accomplishment, and that was running his boat. He could head her into the wind and make more distance along the shore than any boatman I have ever seen in Mexico, and he could "beat it" before the breeze like a scared rabbit on the Sonoran plain.

It is not the purpose of this story to tell the log of this cruise. It was too long and too lingering. Wherever we saw a piece of coast-line which looked good to us we landed, and we made every little Indian village between Manzanillo and Acapulco. In addition to this we fished and photographed along the way, loitering through sunny days and moon-strewn nights until I felt it would be wasting money and time to linger longer, we turned in to the port of Guerrero.

I judge that what the Northern yachtsman seeks to know of Mexico is how to get from place to place, what accommodations he will be able to find at each port of call, the kind of winds he will have, and in what waters he should cruise to get the most pleasure out of his trip, and, at the same time, see at least something of the people and the land. With this in view, I shall speak more generally of the towns, the country, the sea and the people of the sections I have passed through.

All the way from Manzanillo to Acapulco, the Sierra Madre del Sur of Mexico follows the coast, the mountains rearing their heads into azure, sunny skies about twenty miles inland. In some places they come closer to the coast, but in general it is about a day's journey on muleback into their lower slopes. When one has time to land, there is fine shooting all along this stretch of coast, and we landed and hunted whenever we felt like it. All sailors may not be so fortunate as to time as was the writer, but the trip has more than paid for itself in the satisfaction of my having seen a little-known country, gazed upon several curious tribes, and heard remnants of the ancient language of the Aztecs.

For thirty miles South of Manzanillo there is an almost continuous lagoon along the coast, its brackish waters guarded from the sea by low-lying sand-spits. In these lagoons is some of the finest alligator hunting in Mexico. In some of the lagoons a fair-sized yacht could sail without difficulty and the plantations of tropical America brought into view without the trouble of landing. Here, too, are many camps of alligator hunters.

These lagoons or bayous reach almost to the mouth of the Rio Cohahuayana, which empties into the Pacific at Boca de Apisa, into which, also, another small, unnamed stream pours itself. Just before reaching this little bay from the North a sharp promontory, Black Head, projects for a couple of miles out into the sea. The yachtsman should be careful to stand out well in going around this, as there are shoal waters for a mile or two further, and hugging the shore of the headland may result in disaster to yacht and crew. Going on the rocks in this part of the coast is no joke, for there are no life-saving stations along the shore, and passing ships, save winged Indian canoes, are not many. The bigger steamers of the Pacific Mail stand further out to sea, and the man who cruises in this country, either with wind or gasoline or steam for power, must rely solely on himself and his boat.

In the shelter of Black Head there is a fairly good anchorage, unless the wind veers suddenly and blows from the South, when it is best to ride it out in the open sea. Typhoons and hurricanes are seldom met with on the West Coast, though they sweep the Gulf of Mexico coast with a deadly frequency. If a wind comes up on the Pacific, it usually rises in the daytime, also; but heavy thunder-showers at night are common, particularly during the Summer months. If one is following the Summer South, as I have been, and enters the tropics in Winter—or what is known as Winter in the United States—he need have little fear of sudden storms, or even of heavy thunder-showers,

as I experienced none of the former, and only one of the latter, in several months of wandering over these waters.

The Rio Cohahuayana, mentioned above, is the line between the states of Colima and Michoacan. Then, ten or fifteen miles below the Boca de Apisa are scattered three other headlands, jutting into the sea. They are Punta Tejupan, Punta Telmo, and Punta Lizzard; the latter, however, nothing to compare with the famous "Lizard" of the English coast. It is well to stand out from these points, as well, and to come into the lee of one or the other of them during the daytime, finding, where possible, a suitable anchorage; and, if one desires, going ashore to look at some of the Indian villages which so thickly dot this state of Michoacan. Ostula, Bucerias, Marnata and even Cerro Verde, all small but interesting collections of huts, inhabited by no less interesting Indians, can be reached from the shore, and a landing can be made frequently along these low-lying coasts. If one carries an Indian boatman as pilot and general guide, he can usually find places where horses can be obtained for short journeys inland.

Southward from Punta Lizzard to Zacatula, in the adjoining state of Guerrero, the country is absolutely uninhabited and there is no reason to land unless it should be to hunt. Jungle covers most of the country, and, unless one has a large retinue of *mozos* to cut paths through this tangle, it is worse than useless to attempt to penetrate it.

Zacatula, which is a town of some local importance, is situated at the mouth of the Rio de las Bolsas, which, for part of its length, forms the boundary between Michoacan and Guerrero. There is a small bay where the river empties, and the stream is navigable in a small launch or canoe some distance from its mouth. The trip up it is most enjoyable, if taken in the months from November to April, but hot and troubled with insects if taken at other times.

In the bay into which this river empties, are three islands, lying like three wedges, directly in the mouth of what otherwise might be a fairly good harbor. An ordinary draught yacht can run in behind these islands, and be safe from any storm at sea, should so rare a thing as a really dangerous wind strike the Pacific off this part of the coast. Incidentally, some business might be brought the way of the working yachtsman or power-boat enthusiast down here in the establishment of a yard for the building of such craft. The boats of native make, though seaworthy, lack all the lines of beauty known to modern boats, while power boats are not made in the republic. There is a good chance for both these industries, if started in a small way, and the wealthy ranch owners shown the advantages and pleasures of owning their own craft on the many rivers which flow past their broad acres. I believe, also, that there is a good chance for freight and passenger traffic along this coast in a small way in the use of yachts with auxiliary power, or in large power boats, say 50-footers, broad of beam, shallow of draught and not overburdened with cabins, so that they can carry quantities of the loose freight,—mostly fruit, nuts, coffee, sugar, etc.—which makes up the greater part of the produce of this country. Such boats, if put in, must be capable of entering the rivers over the shallow bars, which necessitates their having almost no keel. They must have power

enough not only to meet the current of the higher reaches of the streams, but also to pull themselves off the sand and mud-banks of the lower and wider parts of the rivers. The streams of the tropics are rather more constant in flow than the rivers of the upper parts of Mexico, which, like the streams of the Western States of the Union, are often completely dry during the heated months.

The coast from Zacatula southward to Acapulco is broken with many rivers, small bays, and consequent headlands. At intervals of twenty to thirty miles, some inland, some along the coast, are scattered the villages of Salada, Lagunillas, Sihuatanajo, Agua Correa, Petatlan, San Luis, Tecpan, Santa Rosa, San Geronimo and Zapoto, the latter only about ten or twelve miles from Acapulco. Small lagoons, dignified by the name of bays, are scattered along behind sandy islets, and the stranger may think he is skirting the real coast, when, as a matter of fact, he is following a chain of small islands, behind which is still more open but shallow water. All these form interesting exploration ground, and in many of them the keel of a white man's boat has never forced its way.

Of course, there are no accommodations here, even if one should land, unless by chance he makes friends with some wealthy land-owner and is invited, crew, passengers and all, to be the hacienda's guest for an indefinite length of time. No amount of money can buy the good-will of these rich farmers, but you can get it easily by treating them as equals, telling them stories of the great outside world they have never seen, praising their feudal estates, and showing that you enjoy their hospitality. By all means, when you leave, invite them and their families to visit you in the mysterious Northern republic whence you come. They will never do this, but the saying of it will "leave them smiling when you say 'Good-bye,'" and should you return that way, you will be thrice welcome in the hacienda.

Winds in this part of the sea, at least I found them so for about three months, blow from the North or from the land. The breeze comes up about nine or ten in the morning, freshens until one o'clock and then blows pretty steadily until four or five, when it dies away, only to be on hand again next morning. One does not wish to rush through a cruise on these waters; if he does wish it he had better not come South, for this is the land—and sea—of "do nothing to-day that you can put off till to-morrow," and, after a while, one comes to see the wisdom of this sort of life so close to the equator as is this.

The breezes are thus favorable, and the sea is usually as smooth as glass. I do not mean by this that it is never rough; but, on entering Mexico, the yachtsman can learn at any port what months are apt to be the roughest, and, as he goes on South, reaching into the belt of equinoctial disturbances, the course of the yacht may be so laid that he can journey from port to port by short stages, and so be assured of a harbor should the skies be troubled.

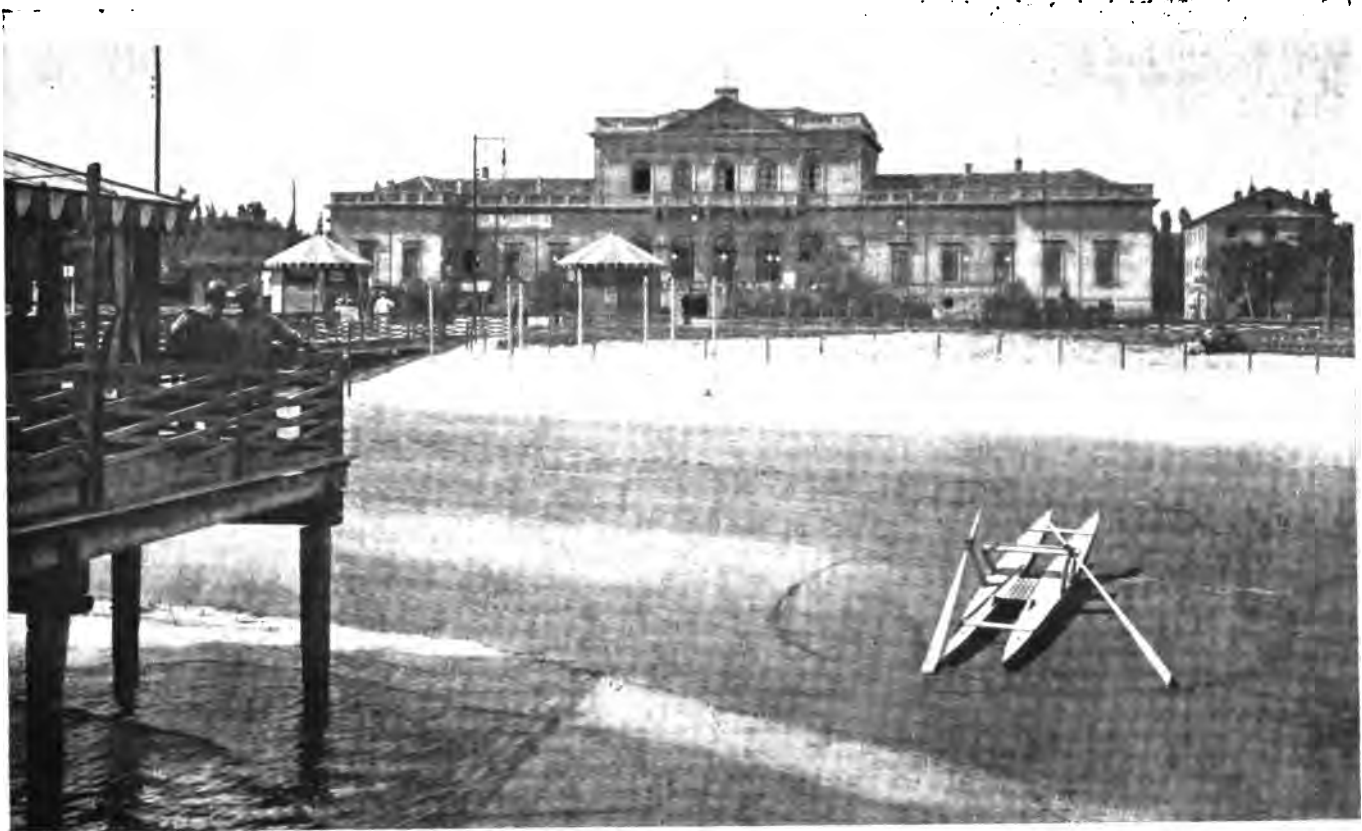
At Sihuatanajo, some forty-five miles below Zacatula, there is a bay, which did very well for our fishing boat, though it might prove too small and too unprotected for a large yacht. I would be willing to chance it in a 90-footer, however, in a bad storm, if I had a good crew—by that I mean an American crew. This place will some day be a good port, if plans of a



Scene in Mantova



Scene at Positano, Near Naples



The Bathing Beach at Rimini



A Castle in Sinigaglia

line and improvements now under consideration by the Mexican Central Railway—a part of the big National merger system—are carried out.

Built on the shore about twenty miles below Sihuatanejo is the village of Petatlan, on the mouth of a river which is unnamed on most maps, and the Indian name of which I have forgotten, though told repeatedly by the boatman. There is good fishing here, and some hunting in the interior, but accommodations of any kind are hard to get, and unless one can find anchorage and live on the yacht, making trips to and from the shore in a small boat, there is not much pleasure in a trip inland, especially if there be ladies in the party. For myself, who have lived so much in the wild that I can eat and sleep and tramp like an Indian, drinking out of moss-covered streams without ill-effects, that is another matter, and the paleface fresh from the North must not expect to fall into these tricks of the jungle in a day nor a year.

From Petatlan, fifteen miles more, ever to the South, lies Coyquilla, and ten or twelve miles below this the village of San Luis, both built on the mouths of small streams, not worthy the names of rivers, and never reaching the sea except in times of extreme high water. Small inlets mark the mouths of the streams, and the country is covered with low hills, almost to a stone's throw from the surf. This country is covered with jungle, and here one begins to get into the ruins of palaces, temples, pyramids and cities which were built about the time the Star rose above Bethlehem, or even earlier. Great trees, hundreds of years old themselves, cover these ruins, and in their shade in many districts the foot of white man has never pressed. No man knows their history; no man knows what lies beneath the earth which covers them, but here and there a gigantic stone beam, or

the rounded end of a 10-ton pillar projects from the soil, mutely telling of the glory of this land in ages now forever dead. All these things add zest to the trip, and no one should coast Mexico without at least touching upon her buried mysteries a few miles inland.

The next point of interest in the shore-line is the Bay of Tecpan, another ten miles below San Luis. Two rivers are supposed to feed the sea through this inlet, and on one of them is situated Atoyac, a considerable village, and on the other, the more northerly of the two streams, stands Tecpan, a lesser hamlet. Each is about eight miles from the coast, and neither is of any importance other than that they stand on the sites of what were once different parts of the same ancient city of the prehistoric race which inhabited what is now the state of Guerrero.

From here it is a 15-mile sail to Acapulco, along a practically level, uninteresting coast. Then one swings into the safe, natural harbor of Acapulco, and should remain there a few days to see what the Mexican Central Railroad will eventually make a great port for South Pacific trade. From Acapulco one can journey inland less than 100 miles to Chilpancingo, the capital of Guerrero, or even on up to Cuernavaca and thence into the City of Mexico, should he so desire. But if one owns the yacht in which he cruises, he will want to go on South. There is an irresistible lure to the lands of the equator, and, having come thus far, one might as well see the Isthmus of Tehuantepec, the port of Salina Cruz and the famous Ferrocarril de Tehuantepec, the shortest transcontinental railway line in the New World.

Of the cruise to Salina Cruz and the Isthmus, I shall tell in the next paper.

(To be Continued.)

WHAT VIPER IS AND WHAT SHE IS NOT

Seth G. Malby

THERE has already been so much written about this little boat that preliminary remarks are hardly necessary, but as for telling the real truth about Viper, I think that the various writers have always boosted the good points and left somebody else to find out the bad ones. There have been many Vipers built, and the four I know of all proved disappointing to their owners in one particular or another. It is the object, therefore, to tell the things which develop and what one might expect from this type of boat.

For the same displacement Viper will show less resistance than any type of boat I know of, and she also has the exceptional quality of being able to increase her displacement at least 30% without increasing the resistance considerably. This is where Mr. Hickman agrees in his later article with the result from model experiments. That Viper has no critical speed, is absurd; this must come in any type of boat, providing the speed is high enough and she still remains afloat. In the April (1910) RUDDER I made the statement that Viper would probably have a very low critical speed, and now

I have ample proof from the results of tank experiments and observation made on the boat itself, that the above is true. Then I also quoted some of the laws of Naval Architecture which Mr. Hickman said no more applied to Viper than something else I do not remember. Let me say this, which will in time be found to be universally used in resistance of model to resistance of boat when both are above their critical speed, that the original laws as found by Froude are applicable, and that in no other state of running, except for speeds above the critical, are the laws of comparison used direct applicable. This is true whether you have a stepped hydroplane, a Viper, or whether you have just a common, everyday form. Mr. Hickman simply did not know what he was talking about, that is all. He made a bad guess. One caution which one must look out for in expanding from model to boat is this: in trying the model, be sure that all your appendages are attached, then you may use an over-all propulsion coefficient as high as 55%, but if your model has not the appendages attached, a coefficient of from 40-45% should be about proper. The resistance of

the appendages at the higher speeds forms a greater percentage of the total resistance than for the lower speeds, and also this appendage resistance forms a greater percentage of the total resistance of hydroplanes than for the regular formed boats, the resistance of the appendages increasing in regular formed boats at about the same rate as the total resistance, while for hydroplanes it is at a much greater rate, and hence a smaller and smaller propulsive coefficient must be used as the speed increases if the hull is tried bare. This is why it is wise to have the boat tried with the appendages attached. Some people might ask what length are we to use in the formula for corresponding speeds, displacements, etc. I would use the original length of the boat. You can use more complicated schemes if you wish, but a glance at the following and it will be seen that we arrive at the same conclusion:

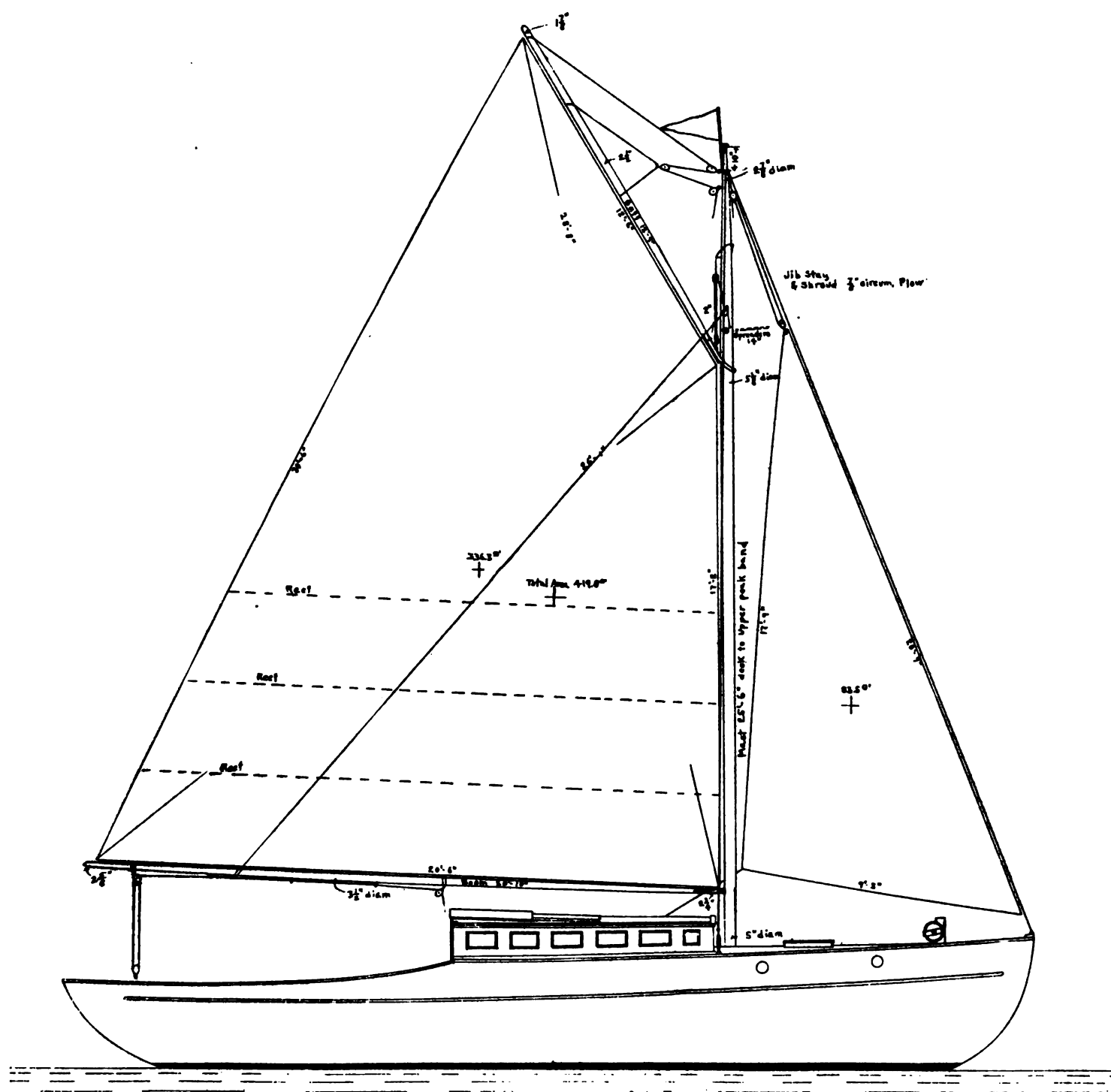
Suppose we have the test of a model 5 feet long, weighing 10 lb, and the resistance at 12 knots was 2 lb. Now we wish to find the resistance of a 3-foot model at the corresponding speed to 12 knots at a corresponding displacement. Applying law of corresponding speed, corresponding displacement, and law of comparison, we find that the resistance of the corresponding model would be .43 lb. Suppose this 5-foot boat was running on a water-line length of 4 feet at 12 knots, since boats at corresponding speeds are identical in condition, the 3-foot model would have a length of 2.4 feet or 4-5 of 3. Working it out on this basis, we find again that the total resistance would be .43 lb. We arrive at the same conclusion whichever way you figure it, and the original water-line length seems to be the easiest. Several things might be said about the trim of the model, but placing the center of gravity about 60% of the total length of the boat from the bow, should give satisfactory results. You can easily tell when you have it too far forward for you will see her disappear under the surface of the water.

Now as regards this boat, the speeds at which Mr. Hickman has run this boat are about the practical limit of the craft. Do not think that you can have a successful contender for the International Trophy with this hull. You might win if you had plenty of power, boat built especially strong and well designed, and a smooth day. If you are looking for a cheap, safe and speedy boat, and do not want to run much faster than 25 miles an hour, build a Viper. If you go above this speed, then you begin to get into trouble, and it would take the best naval architect with years of experience and also at least a year's experience with this particular boat, before he would get her going properly. Probably the first thing you would notice for high speed is that she will *not* turn against the torque of the wheel. This is not at all surprising, but then one does not think of these things all at once. The rudder has a certain longitudinal arm from the center of pressure of the rudder to the center of displacement, which in combination with the pressure of the rudder might be called the "turning moment"; as the center of displacement moves aft, this arm will become shorter and shorter, so that you have not the same moment acting for a low speed that you would for some higher one. One cure for this might be a larger rudder, but this increases resistance. The thing which is best to do is to move the rudder farther back. This can be done by building out a framework at the end of the boat. If you have had trouble about steering then this will be

a positive cure for it. This frame can be made of some kind of suitable tubing, and the rudder should be placed aft of the transom $2\frac{1}{2}$ to 3 feet on a 20-foot boat. Be sure also that your weights are figured correctly, as they will be hard to change after your boat is built. It is absolutely essential that this boat has the center of gravity aft of the midship section, or you will take a hurried trip somewhere before reaching a very high speed. She is perfectly safe just as fast as you want to ride, providing your center of gravity is right, and you can stand the pounding.

Mr. Hickman is again away off as far as this goes. I think in none of his quotations of speed does he mention the height of the waves which were running while the test was being made. While I know that a heavy sea, say waves from 20-24 inches high will cut just about one-third off of Viper's speed, the pounding is terrific. The boat which we had was 24 feet long, and in other ways corresponded to Viper. She had a 120-h.p. engine, and in smooth water we got about 33 miles an hour with all power on. She was built very heavy out of 1-inch mahogany, and was about the strongest construction possible. However, every screw in the bottom was loosened, and planks had calking knocked out and the boat leaking badly after only a few races. It is a bad mistake to say that she will not pound destructively. Another item to be considered is that the bottom must be built exceptionally strong, for if this is built too light, you will get a considerable movement in same which might prove disastrous to the alignment of engine and shafting. If possible attach everything to the sides of the boat and brace these well.

One thing which I wish to retract, and that is the cause of the boat rising in the stern. My explanation was that the water thrown by the propeller struck the bottom and forced the bottom up. Evidently I had forgotten some of Newton's laws, and the one most of all, about action and reaction being equal and opposite. Mr. Hickman might not like this explanation but, nevertheless, I think that it might prove as satisfactory as any. It is a well-known fact that the descending blade of a propeller is much more effective than the ascending blade. Now, of course, the forces acting on the blades are normal to the surface, but these forces have vertical components. The inequality in these forces acting in opposite directions in the same plane, shows itself in a force acting through the propeller strut, which in turn raises the stern. Take off the strut and I don't believe you will see the stern rise. Somebody will probably say, isn't this going on all the time whether you are running or standing still, but when you get running, something else comes into play which again brings the stern down. The greatest lifting effect is in the region slightly aft of where the water first touches the plane; as you go aft this lifting effect decreases until at such a time you actually have a negative lifting force, that is, the water is pulling down instead of pushing up. This might account for the extraordinary fact that boats have run with their center of gravity ahead of the point of support. I am quite sure that if several pressure gauges were placed along the bottom of Viper, and all read simultaneously, that the negative lifting component would be noted. I talked with a distinguished designer of hydroplanes on this subject, and he seemed to be of the same opinion. It would seem to be an easy matter to determine the exact effective plane length for a certain angle and speed.



Thirty-Two-Foot Auxiliary. Designed by Norman L. Skene, Boston, Mass.

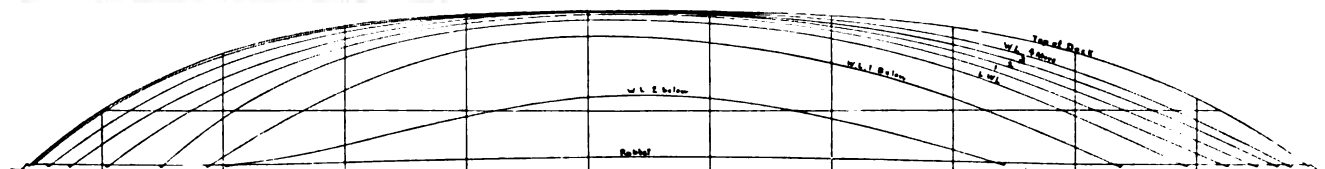
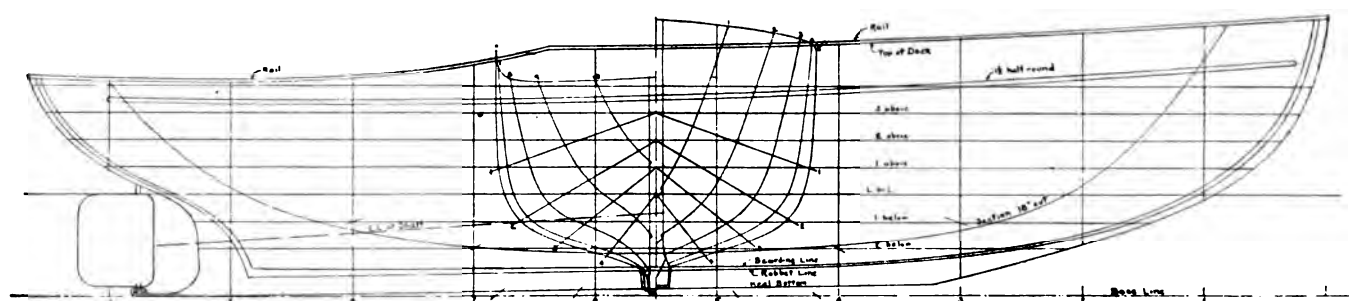
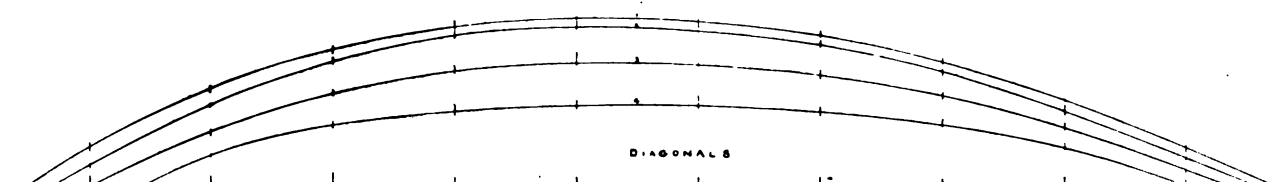
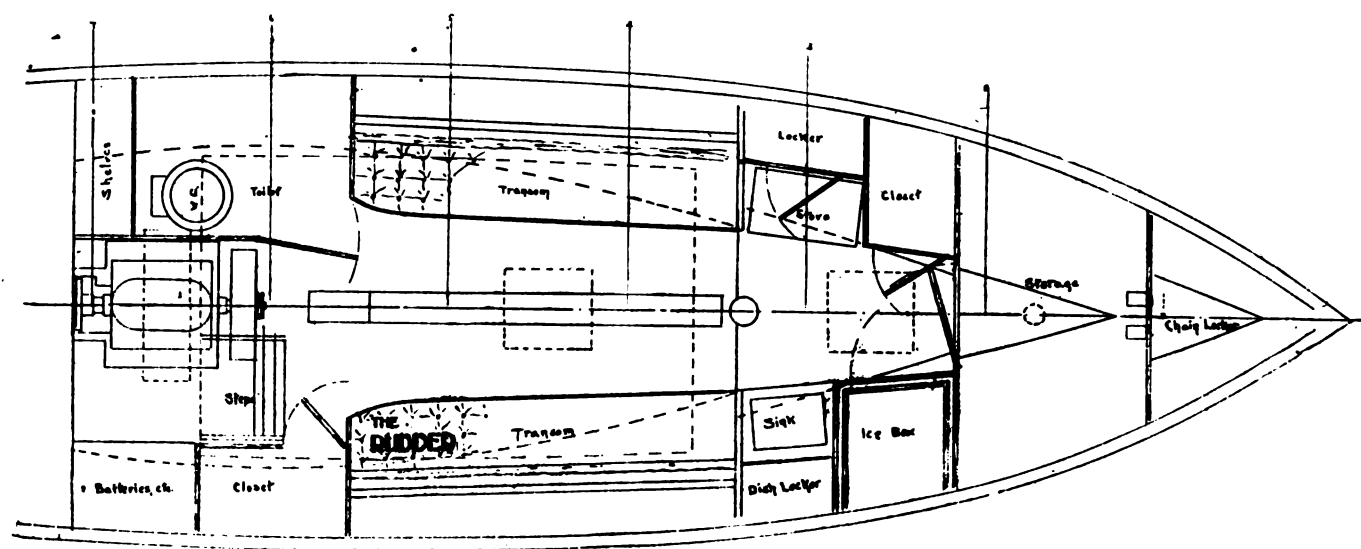
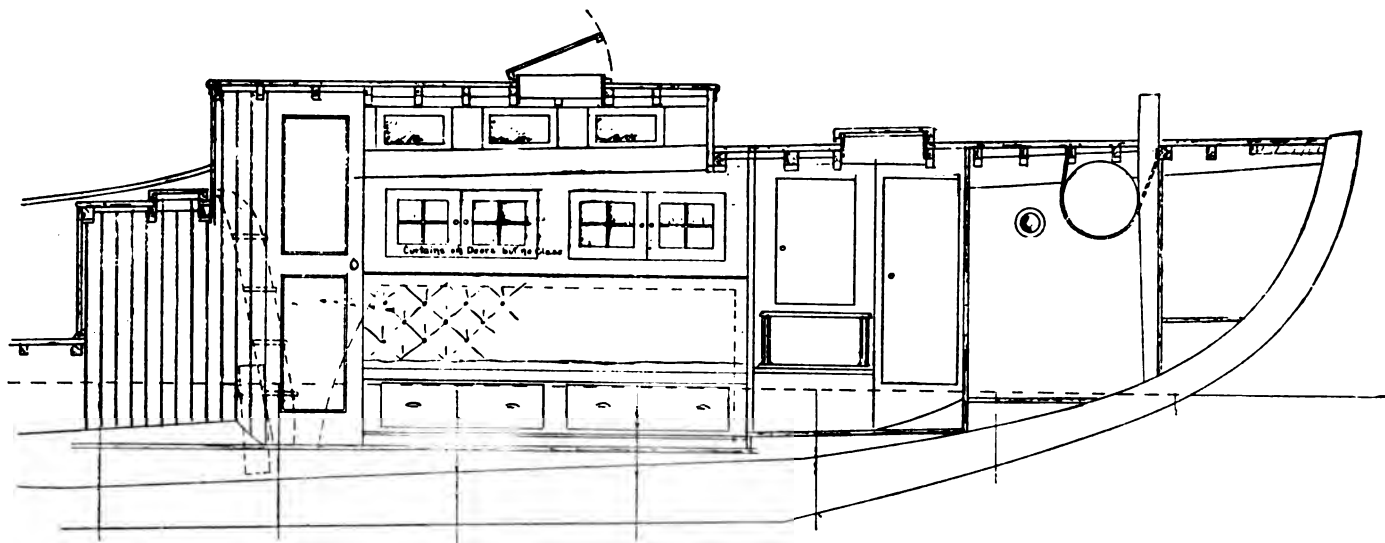
AUXILIARY THIRTY-TWO-FOOTER

THIS rather novel little auxiliary was recently designed by Norman L. Skene, of Boston, for service in the St. Lawrence Gulf, where gasoline is scarce and repair shops few.

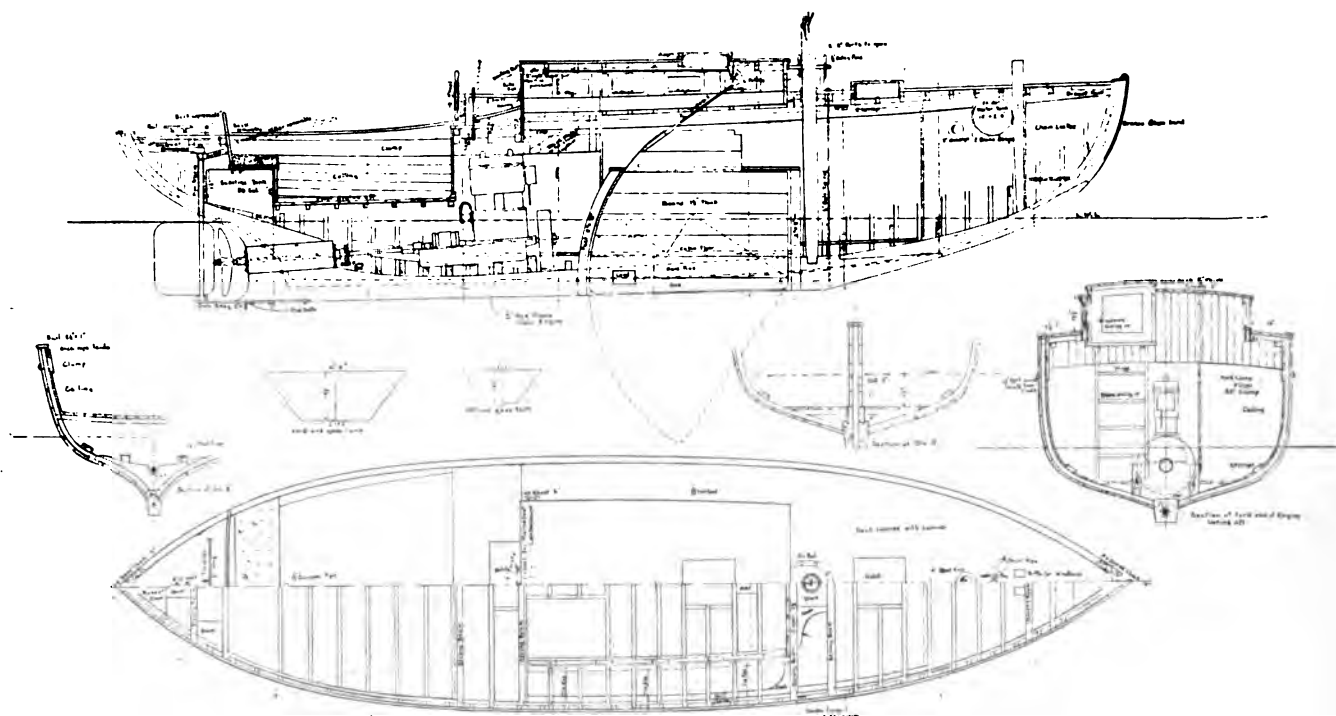
The boat is full powered, with a 12-h.p. Standard engine, with the sails as auxiliary to the power. There is, however, sail enough to make the boat handle nicely and with centerboard down and a good breeze she should beat to windward handily.

The cabin plan shows comfortable cruising accommodations for two people, with toilet, galley, and large storage space forward. Full headroom is had under the small cabin trunk over a space sufficient to make the boat very livable. The high freeboard and flaring ends will make the craft extremely able.

This is a type of auxiliary that will appeal to many people,—full powered, able to buck any ordinary Summer sea under power, thus avoiding tedious thrashing to windward under sail, yet capable of going under sail



Cabin Arrangement and Lines of Thirty-Two-Foot Auxiliary



Construction Plans of Thirty-Two-Foot Auxiliary

alone if desired, thus saving fuel in long runs with strong favoring winds and giving a sense of security against breakdowns when cruising in isolated regions.

Length o. a.	32 feet 0 inches
Length w. l.	26 " 0 "
Breadth, extreme	8 " 0 "
Draught, extreme	2 " 6 "
Freeboard, forward ...	4 " 4 "
Freeboard, aft	2 " 10 "

FORTY-SIX-FOOT CRUISER

THE 46-footer shown herewith was designed by J. Murray Watts, of Philadelphia, Pa., for G. W. Van Benchoten, of Providence, R. I., and at present building at the yard of F. S. Nock, East Greenwich, R. I.

"This boat is a type which has proved its seaworthiness and is the result of personal observation of the designer on the performance of power boats in long-distance races. She is really a small edition of Caliph, which won the race from Havana; though the lines have been improved to give more buoyancy forward, and with a straightened dead-rise improve her initial stability.

"Below decks she is laid out with a view to comfort-

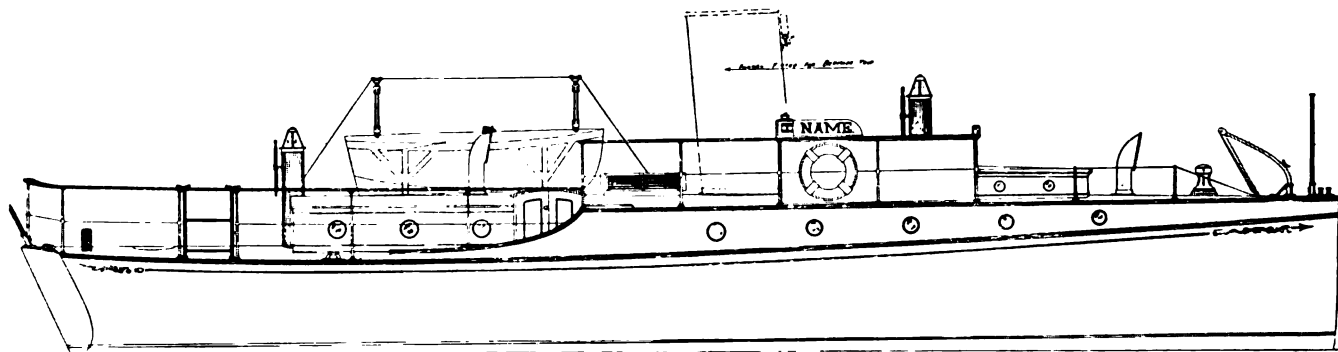
able cruising accommodations, having a large saloon with the stateroom and toilet communicating. The engine room and galley are forward, leaving the owner the best part of the boat to live in. The construction of this boat is very heavy and she is fully 50% stronger than the average boat of her size; the writer's experience having found that it is much better policy to put the weight into the scantlings than into the ballast. Owing to her large displacement, and moderate horse-power, this boat will rate very low; while her lines will permit of her being easily driven in a seaway."

The engine to be installed is a four-stroke medium-speed machine of 25-h.p., which is expected to drive the boat at a speed of 10 nautical miles per hour.

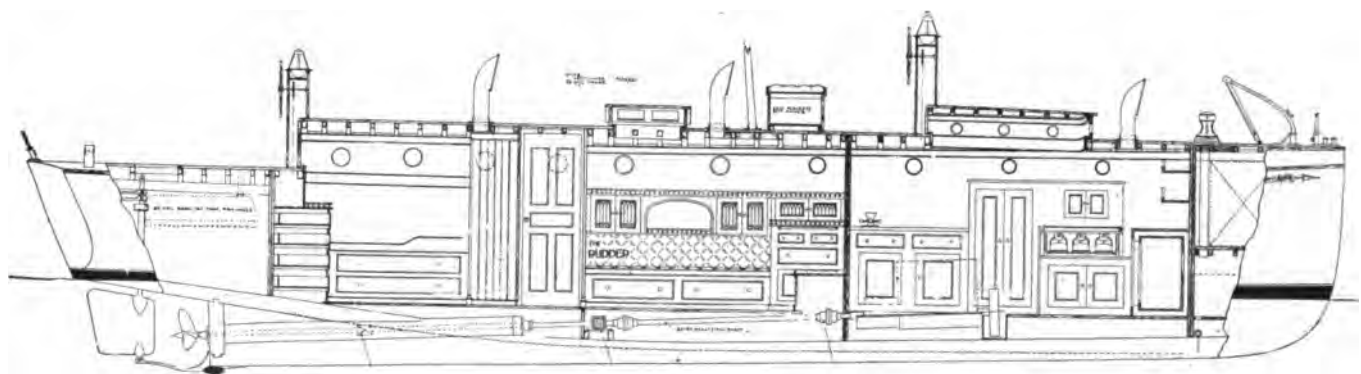
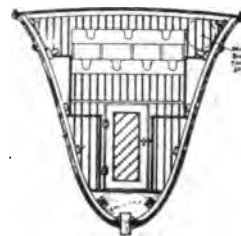
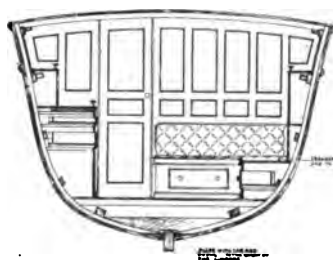
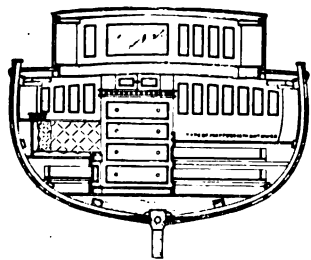
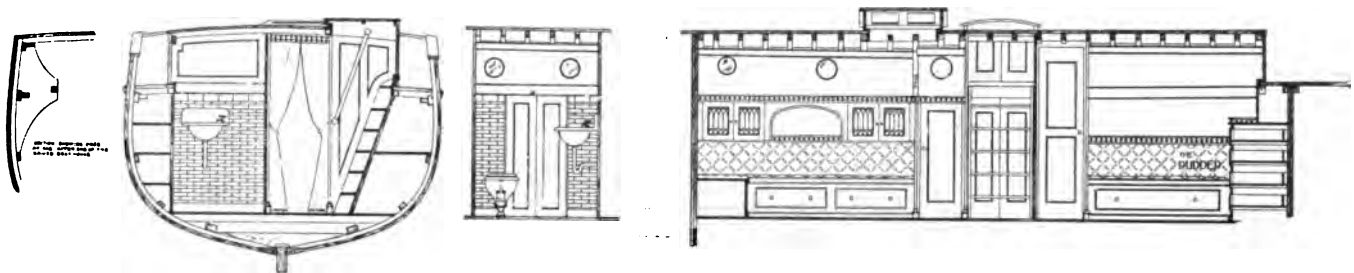
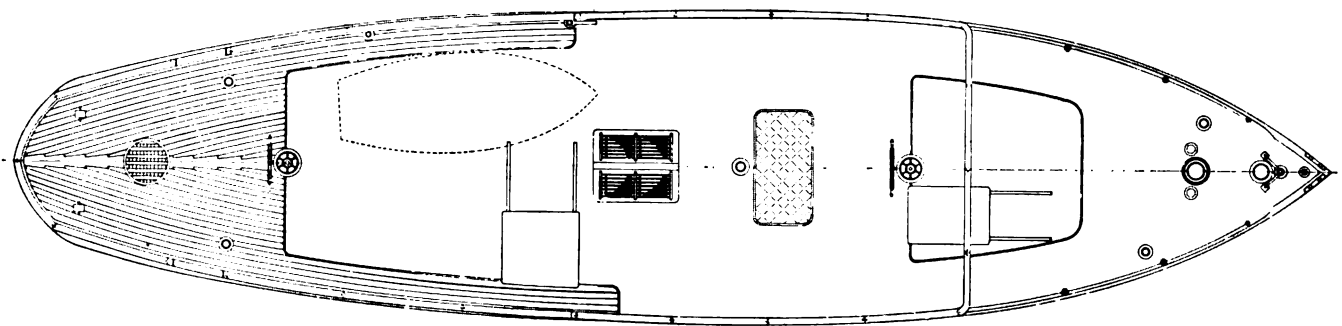
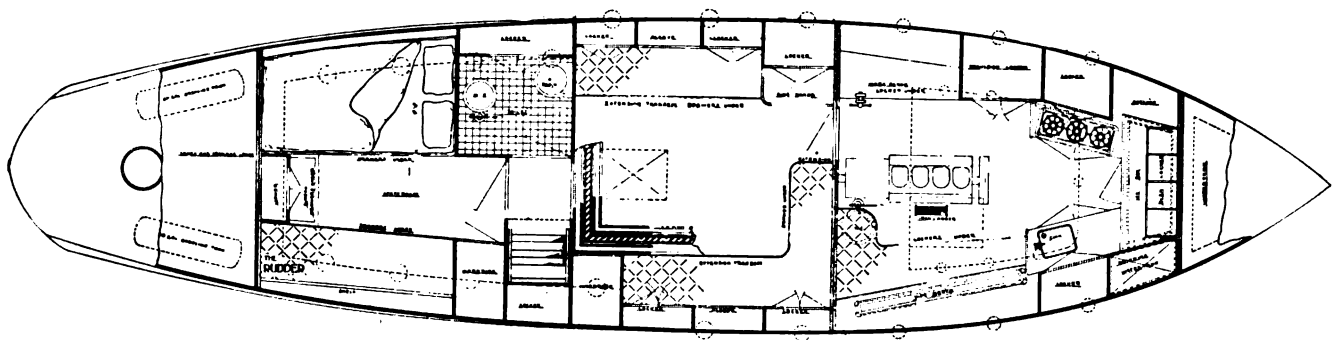
The boat will be an entrant in the Bermuda Race, and as she will be in commission over a month before the start of the race there will be ample time to try her out thoroughly. The outboard profile shows a stack, but the owner has not yet decided whether to use the stack or to employ large cowl ventilators for ventilation.

The general dimensions are as follows:

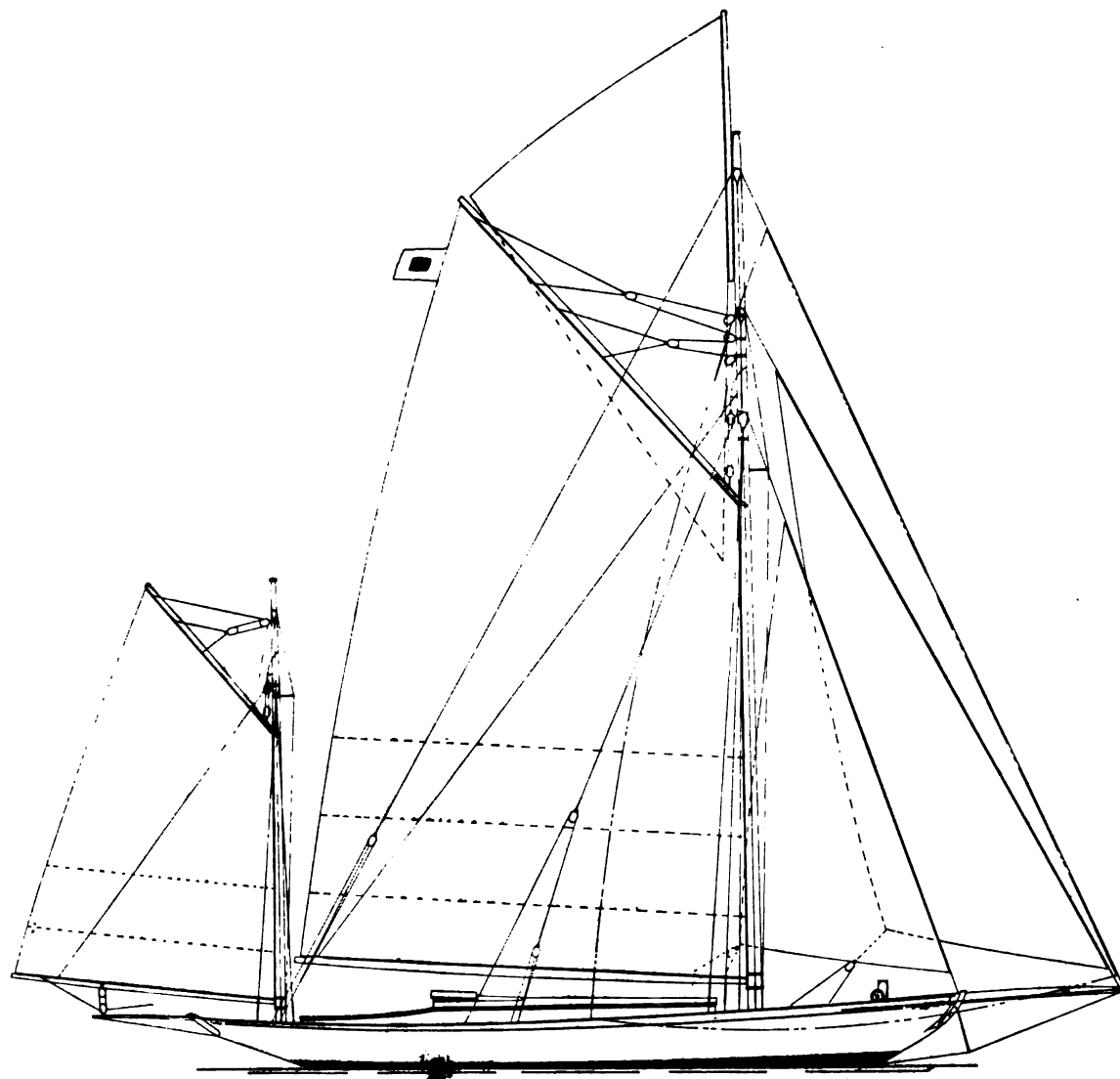
Length o. a.	46 feet 0 inches
Breadth	10 " 6 "
Draught	3 " 6 "



Forty-Six-Foot Power Cruiser. Designed by J. Murray Watts, for G. W. Van Benchoten, Providence, R. I.



Arrangement Plans of Forty-Six-Foot Power Cruiser



Thirty-Six-Foot Yawl. Designed by Edson B. Schock

THIRTY-SIX-FOOT YAWL

THE 36-foot cruising yawl shown herewith was designed by Edson B. Schock, for use on the Pacific, and the desire was to produce a boat that would not only prove entirely seaworthy but at the same time possess some little speed.

In designing the sail plan it was desired to obtain a fairly large area and not have too much weight aloft, with the result that a polemast was decided upon. This, it was thought would not only allow of a fair-sized gaff-topsail, but would also allow of a small baby jib and somewhat larger balloon jib and spinnaker than could otherwise be carried, and also give the additional advantage of having the peak halyard blocks far enough aloft so that the gaff could be properly held in place.

The form of the hull is such that she should be an easy sea-boat in all kinds of weather and should lay hove-to properly if occasion require. Another advantage in an easy form is that the general shape of the hull itself lends to strength, so that with the same amount of wood in it, it makes a much stronger hull than one with a hard bilge and flat floor, and is much easier on her spars and rigging.

The accommodations consist of a forecabin with

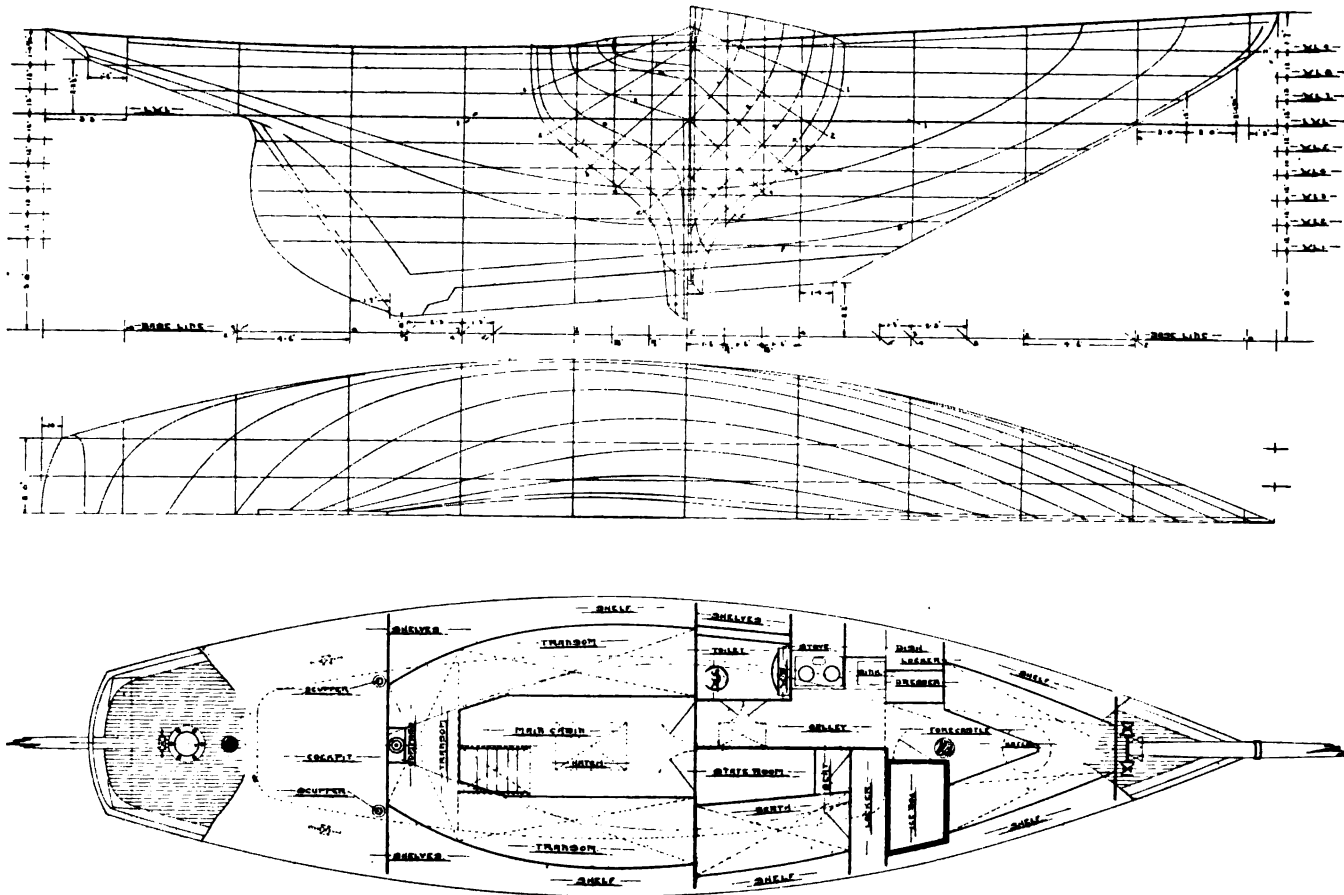
room for two men, galley with stove, sink, dresser, and ice-box. From the galley to the cabin is a passageway and off the passageway is the toilet room. On the starboard side is found the owner's stateroom with berth and clothes locker.

The main cabin is entered from the cockpit by passing over a fair-sized bridge deck, which adds greatly to the strength of the hull by securely tying it together at this point. In the main cabin is found a long transom on each side, with another transom across the after end. This gives the maximum amount of room and enables an owner to make any alterations he may desire at the end of a season or two without having to tear out a lot of joinerwork.

The cockpit is small and has scuppers for bailing in each of the forward corners. Should the boat at any time ship a sea that filled the cockpit, it would in nowise disable her as long as it did not get below, and would soon flow off through the scuppers.

The dimensions are:

Length o. a.	49 feet 5 inches
Length w. l.	36 " 0 "
Breadth	12 " 8 "
Draught, extreme	8 " 0 "



Lines and Arrangement Plans of Thirty-Six-Foot Yawl

FORTY-TWO-FT. CRUISER UONDA

THE plans on the following pages are from the board of Frederic S. Nock, of East Greenwich, R. I., and illustrate the cruiser Uonda, building at his yard for H. S. Bullock, of New York City.

The power plant comprises a three-cylinder, 30-h.p. Lamb engine, and the boat was designed specially to meet the requirements of the engine in question and at the same time incorporate the necessary accommodations called for in a boat with a restricted over-all length.

The construction is moderately heavy, the keel, stem, horn timber, stern crook, etc., being sided 4 inches. The frames are $1\frac{1}{2}$ by $1\frac{1}{2}$ inches, spaced 9 inches on centers, hanging and quarter knees where shown, clamps $1\frac{1}{2}$ by 5 inches amidship, tapered at ends, deck beams $1\frac{1}{2}$ by $2\frac{1}{2}$ inches. The decks are of $\frac{7}{8}$ -inch material, covered with canvas, trunk sides of mahogany as also hatches, companionway, slide, runs, doors, etc. The interior joinerwork is plain but substantial. Cypress staving is used for bulkheads, berths and locker fronts, etc. Paneled doors with mahogany mouldings afford relief, and the interior finished in natural wood, with the underside of deck and beams in white enamel, presents a pleasing contrast.

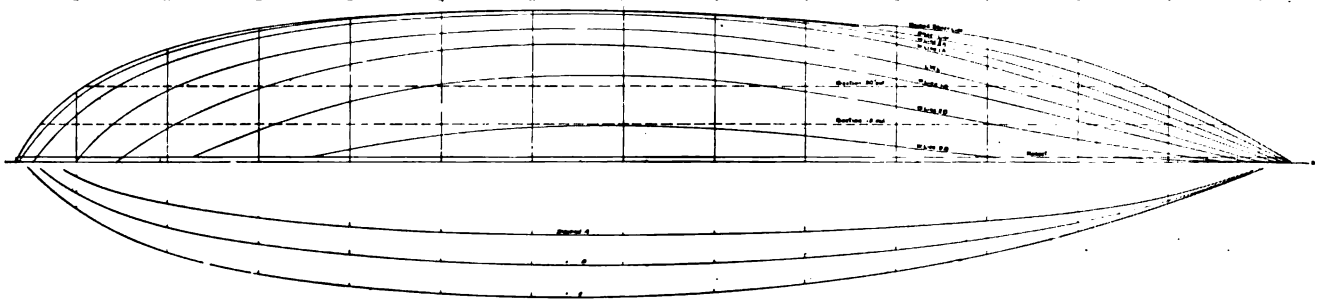
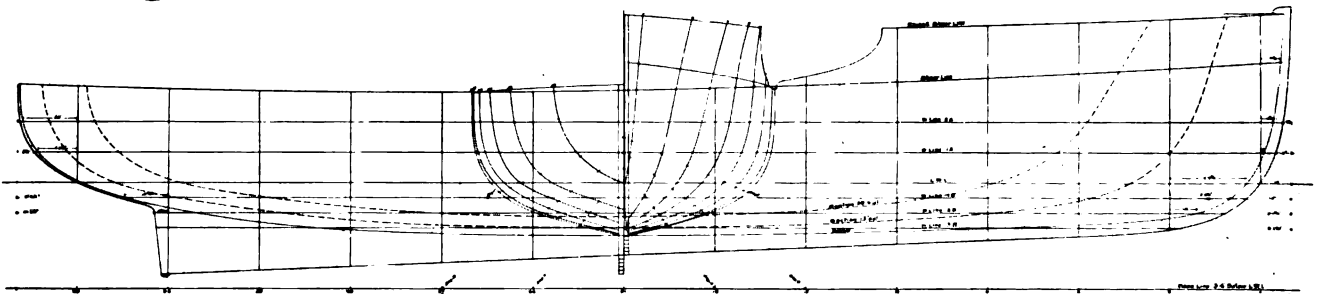
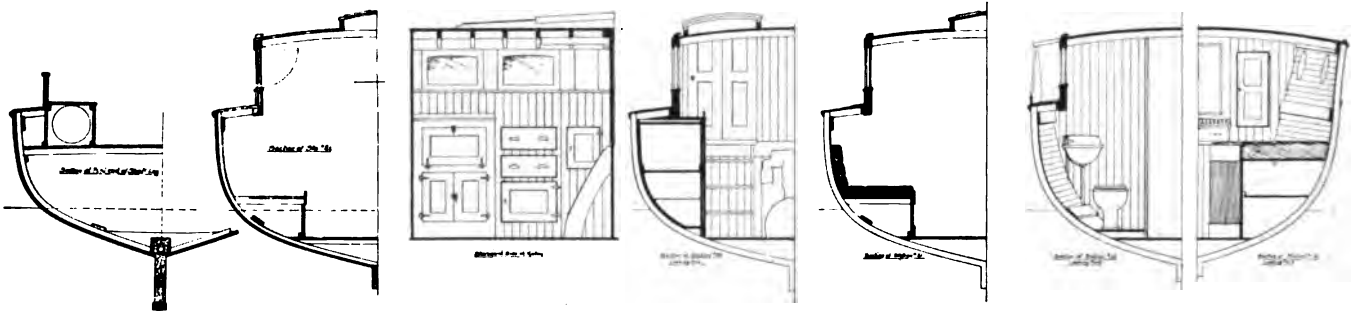
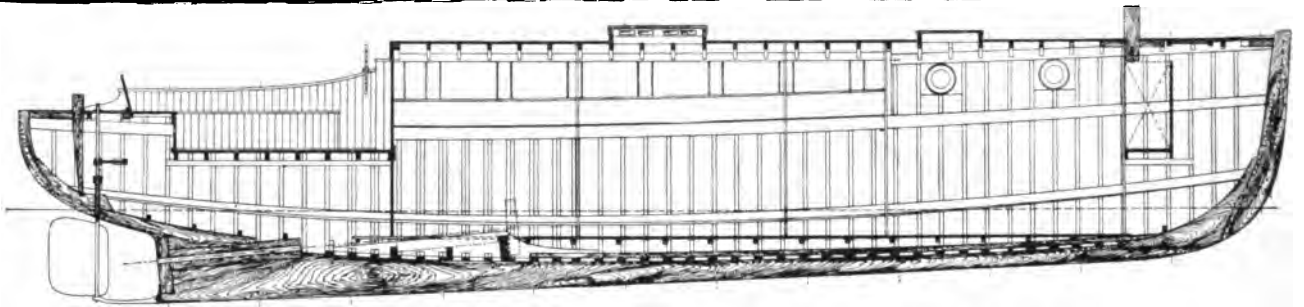
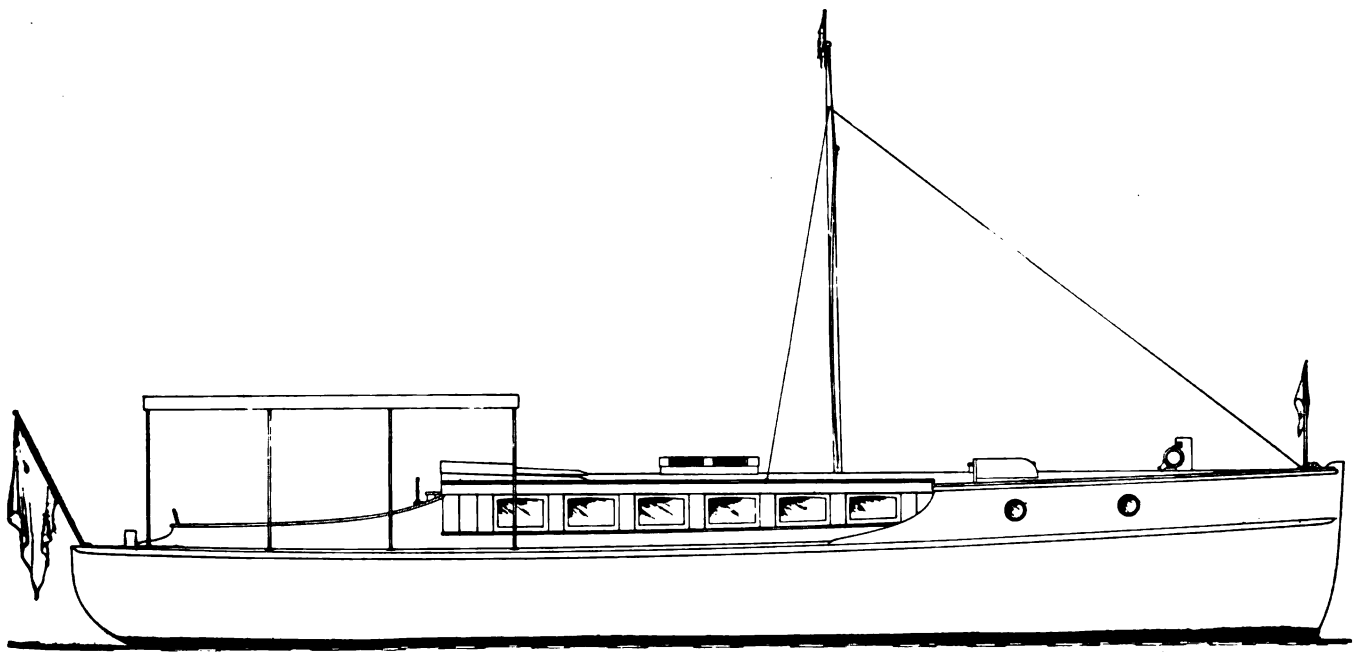
The gas tanks, cylindrical in form, are situated under the seats in cockpit, and are arranged to supply the fuel from the after end, seamless bronze pipes with a valve at each tank and another valve on each line close to filter admits of drawing from either tank. From the filter to the carburetor there will be a single line of pipe. The filler pipes are arranged in the most approved man-

ner, being connected to a deck plate, thus if any fluid is spilled, it will run over the top of seat where it will rapidly evaporate. The vent pipes of bronze are so arranged that no amount of rolling will have any effect on same and if the tanks are full, the fluid will not overflow.

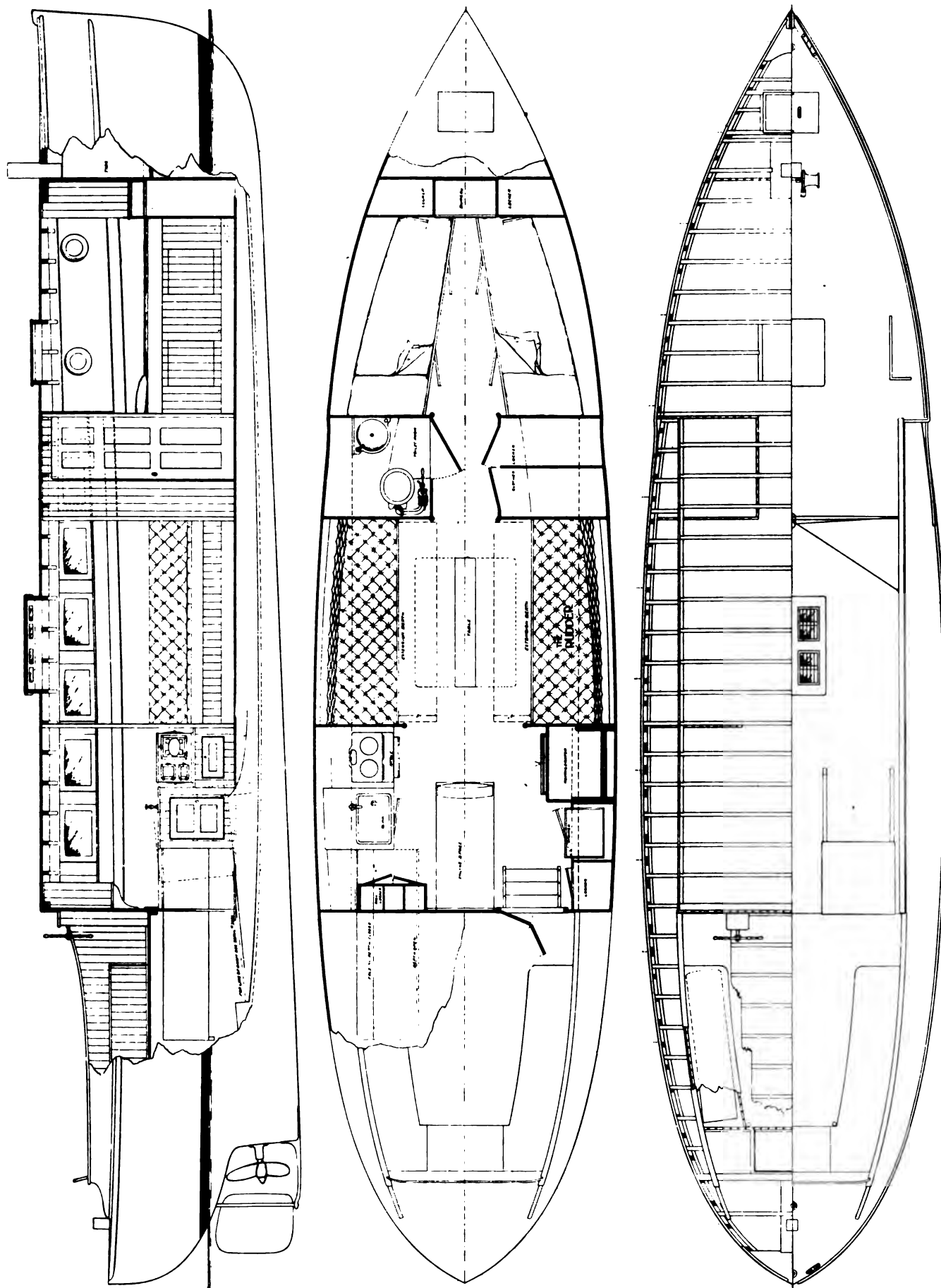
There is little to be said relative to the arrangement plan, as this is clearly shown in the drawings. In the forepeak is a water tank, feeding by gravity to the sink in galley and lavatory in toilet room. Provision is also made for the storage of anchors and cables, access to the space being provided by a flush hatch forward of the windlass. The forward stateroom is fitted with two berths with ample locker space below same, and at the forward end there is a dresser with drawer, mirror, etc., and on either side of same a locker. On the port side there is a toilet room with closet and lavatory, and opposite same is a large wardrobe with a frame partition through the center, thus allowing for two extra rows of coat-hooks. The saloon is fitted with two extension transoms and folding table. The engine room and galley are arranged with a refrigerator, provision locker, drawers and tool locker on starboard side, and on the port side a locker for stove, dresser, sink, dish lockers, etc. Extending under the deck there is a berth for paid hand, if it is desired to carry one.

General dimensions:

Length o. a.	42 feet 0 inches
Length w. l.	39 " 6 "
Breadth	10 " 0 "
Draught	3 " 0 "



Uonda, 42 Ft. O. A. Building for Mr H. S Bullock of New York City



Arrangement Plans of Forty-Two-Foot Power Cruiser. Designed and Building by Fred. S. Neek, East Greenwich, R. I.



Fauber-Saunders Hydroplane, Brunhilde, 50 Ft. Designed and Built for Racing at Monaco, but Withdrawn

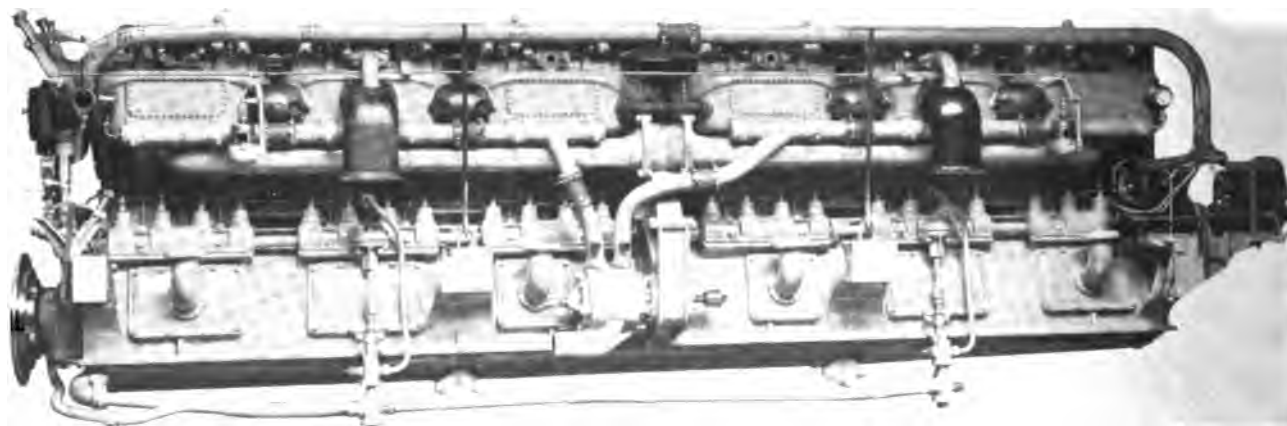
BRUNHILDE

FOR some little time past it has been known that a very powerful hydroplane was under construction for the Duke of Westminster; but strict secrecy was maintained up to the launching ceremony, which took place on February 23d. It was generally believed that she was being built especially to challenge for the British International Trophy, so many sportsmen have been disappointed to learn that she is a 50-footer. However, in all probability a hull within the 40-foot limit will be built for the same engines, and Brunhilde, as she is named, may eventually be seen in American waters. Nevertheless, she is none the less interesting in view of her extraordinary guaranteed speed, viz.: 45 nautical miles per hour. The owner of Brunhilde expected to carry off the Coupe des Nations at Monte Carlo and also to have some excellent racing with Mr. E. Mackay Edgar's 800-h.p. Miranda IV type, Thornycroft hydroplane, but at the last moment Brunhilde was withdrawn from the racing and her two twelve-cylinder engines were reinstalled in Ursula, and this craft sent to Monaco.

Regarding the constructional details of Brunhilde,

she was built by Saunders, of Cowes, the builder of Ursula, Pioneer and Columbine, and is 49 feet 8 inches long, by 8 feet 6 inches breadth of beam, with three beautifully matched $\frac{5}{8}$ -inch mahogany skins sewn together with copper wire, with mahogany deck forward having $\frac{1}{8}$ -inch teak veneer. The bow is very noticeable for the extreme flare, which gives a very pretty effect, and she is altogether a much more handsome boat than Pioneer, and on the whole her lines are very pleasing. Her underbody form is of hollow V sections with five steps, not counting the stern. The total bare hull weight is 21 cwt., while in complete racing trim she will weigh $5\frac{1}{2}$ tons. To lessen vibration the engine bearers are carried the full possible length of the boat, and are of lattice construction, for the sake of lightness.

The propelling machinery consists of the big two twelve-cylinder engines which have done so well in Ursula, one of which was seen in Pioneer in the International races. Each engine develops a rated horsepower of 380, but it is certain that about 400-h.p. is developed at the full revolutions, so that 800-h.p. is transmitted to the propellers. The engines have been installed side by side, driving twin screws.



One of the Huge Twelve-Cylinder Engines at Present Installed in Ursula, and to be Used Later in Brunhilde



Brunhilde on Her Trial Trip



Launching of Brunhilde

BROOKLYN Y. C.'S RECIPROCITY RACE FOR HEARST CUP

STRANGE as it may seem the most direct course from Sandy Hook to the sea buoy off Halifax Harbor is almost a straight line. Except for a jog or two when passing the Vineyard and Nantucket, the track runs almost E. by N. to Brazil Rock off Cape Sable, the outermost south-end of the Acadian Peninsula. The navigation between the two points is not difficult, if we eliminate the two things which make all navigation difficult—fog and currents. These two things are nearly always present over this course. Especially the fog, which during the Summer season never leaves the vicinity, except when driven off by a land wind. It is at the worst in June and July, and least likely to be found in the Fall months.

The currents are always there, varying in strength and direction, and no man can lay down the law of their coming and going. Their strength and direction depends upon the direction of the wind, the barometric pressure and the age of the moon. Sometimes they are weak, at other times very strong.

The course from Coney Island lies along the Long Island Beach and offers no difficulties, as the shore shelves off gradually, and by keeping outside the six-fathom curve you can hit nothing; this course steered E. by S. will take a boat clear of Fire Island Lightship; from that point it is best to shape a course for Muskegat Channel if the said passage can be made in daylight and clear weather. I would not advise a stranger to tackle the Muskegat Passage if a dark night, or in thick weather. This course will take you either inside or outside of Nomans Land.

Off the North of Muskegat Channel is a dry sand-bar called Skiff Island; give this a berth of about a cable and when clear turn North and you will find the buoys marking the passage. There is plenty of water in the channel, but the tide runs strong and the place is full of rips, but though they look ugly they will not hurt you. When Wasque Point on the Vineyard bears South of East you can head direct for Pollocks Rip, and run safely across any of the shoals with less than five feet draught. In fact, from that point you can head direct for Brazil Rock.

The navigating will come in voyaging from Pollocks to Cape Sable. There will be no difficulty in even a green-horn finding Nova Scotia, but just where he will find it depends on his skill and good luck. The Gulf of Maine, as the sheet of water is called, is the home of currents of all kinds and descriptions, and it is impossible except by sounding to tell which way they are running. After

a strong South or Southeast wind the water will be found running very strong out of the Gulf; after several days of Northwester it will set strong into it. A very swift tidal stream runs off Sable at certain ages of the moon. For what you don't know exists there is no use allowing, so the better way is to steer a direct course for your landfall, and trust to your lead to set you right if drifted off the course. There are soundings all along this course, with several high spots that give the navigator a good chance to fix his position. Be sure and have a good lead and use it. The lead is the only sure thing in these waters.

South of this course is the Georges Shoal, which is crowned by a bank on which the sea breaks very heavily at times. It is said sometimes to be awash. You will usually see a number of fishermen anchored on this shoal. The current sets very strongly here at times. It is best to give this place a wide berth at night or in thick weather.

The coast of Nova Scotia from Brazil Rock to Sambro offers no difficulties, being bold with no outlying dangers. It is well buoyed and lighted and has a splendid equipment of fog signals and submarine bells. There are harbors every ten feet, and safe to enter at any time in the daylight.

Off Sambro there is bad outcrop of half-tide rocks, and above-water reefs, and it should be given a berth, the outer buoy being left on the port hand. Halifax Harbor is a grand expanse of water and offers no difficulties to a small boat, all the dangers being close under the land.

If you get fog, as most likely you will if the race is held in July, you can go ahead with absolute confidence by using the lead. There is some talk of sending the boats around Nantucket Light-Vessel. This I am opposed to, as the course from Nortons Point to the Light-Vessel is the track of the west-bound ocean liners, and if the weather is thick it is not a healthy place for a small boat to be knocking about.

The other course keeps them well clear of the shipping routes for most of the way. So far as rough weather is concerned, it is extremely unlikely that there will be any bad weather in July. You may catch a few hours' blow from the Southeast or a Northeast wind and rain, but there will be no weather to worry an able, seaworthy boat. This race will do a lot for the sport by introducing yachtsmen to one of the finest cruising grounds on our coast—the seaboard of Nova Scotia. The total distance over the course shown on chart is 518 miles.

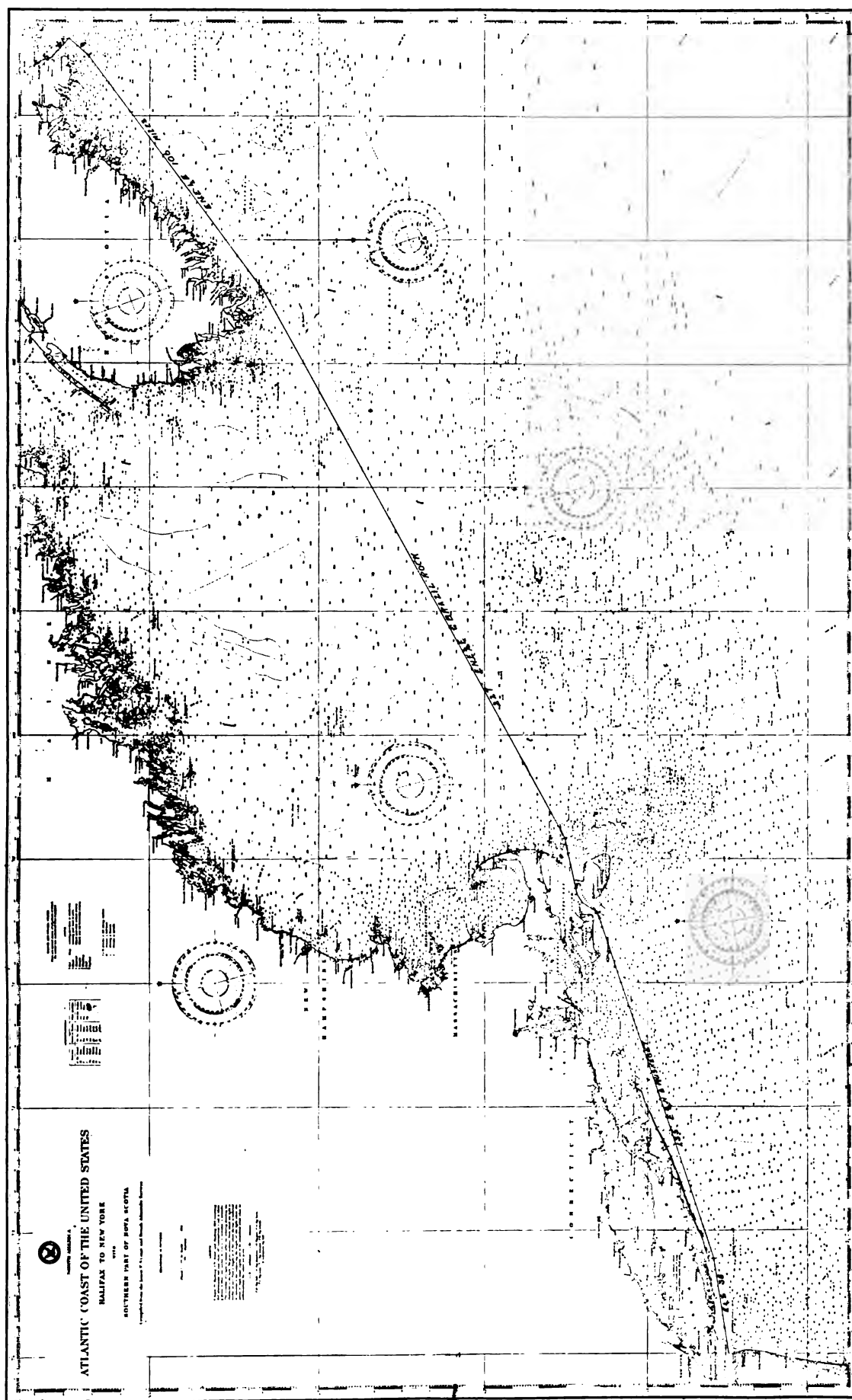


Chart of the Course of the Brooklyn Y. C.'s Reciprocity Race

ROUND THE CLUBHOUSE FIRE

THE fire is well burned down, the end of the last log is sticking out of the gray ash, smoking and smoldering like an old love affair, and there is no more fuel in the locker. Let her go out, say I, for I'm sick of this armchair life and want to get outdoors, where a man don't have to breathe the same air twice over in order to get a good full of oxygen. I'm tired, boys; tired as a dog that has hunted rabbits all day. The only difference the dog runs his quarry to earth, while mine take to the water. I was just thinking when you joined me, what's the use of all this—this living, this working, this worrying, this fretting and fussing? Isn't the negro who sits in the shade of the plantain, content that he has a shirt to his back and a meal in his belly, the more sensible fellow? You and I at the end of it will get no more than he will—six feet of mother earth. To the devil with your fifty years of dress shirt existence, trousers with pockets, and houses with doors, and all the rest of the paraphernalia that goes to make up civilization. When are we happiest? The day we throw this all off, and, clad in our worst, play savage on some lonely shore, dragging a meal out of the water as our ancestors did before some misguided idiots invented money, markets, and manners. To-day I have a thousand-fold the knowledge possessed by the most learned and brilliant of the ancients, but am I any happier? Not a bit. You and I are being dragged at the wheels of the thing we call Progress, and those who ride, cry out to join in a song of triumph. For what? Look in your hands. Is what you have succeeded in grasping worth any more than a fistful of yon gray ash in whose crumbling heap the last sparks are flickering and passing away?

* * *

I get a number of letters every year from young fellows who think they want to be naval architects, and whom I advise to become boat carpenters. Of the first variety of animal we have too many already and not enough of the second. Good all-round boat-builders are hard to find, and when you do find one, harder to keep. If a man has a genius for naval architecture he won't want my advice or anybody's advice; he will know what to do and do it. If he hasn't a genius for that art, let him keep out of it. You cannot direct, shape or suppress genius. No amount of advice could have kept Tennyson from being a poet, or made Lister to choose aught but surgery. Arthur Wellesley took to the army and Daniel Webster to the law just as a duck does to water and a goat to high ground. The trouble in this land is we try to drive boys who would make good mechanics and farmers into professions. Our school children's heads are filled with rot about farmer boys who left home with a shirt and hat, and became noted lawyers, eminent divines, and prominent physicians, or else millionaire merchants. But nothing is said of the mighty army of failures, that drag out a miserable existence pilfering, preaching and physicianing, and who, had they

been left to guide a plow or shove a plane might have lived in comfort and died happy.

* * *

In the same reckless fashion thousands rush into writing and endeavor to be authors. They may have ideas, they may possess imagination, they may be able to shape a plot, but they never have learned to write. Writing is an art. No man is born a writer any more than he is born a dancer. Pick up any of the magazines and read the stories and articles. They are written without style and might be produced by one person. The only difference being that each one is worse than the other. Again hundreds write on subjects they know nothing at all about. Men edit papers devoted to trades or arts they are entirely ignorant of. We read garden papers that are made up in an office by a man who don't know an annual from a perennial and to whom all soils look like dirt. We have men running boating papers who don't know which tack a vessel is on, and who couldn't work a traverse to save their salary. I have sea stories sent to me to read, written by people who never saw the sea, and couldn't find the weather-earring even if it was ticketed. One of these stories appeared recently in a weekly having a large circulation. The author puts the following order into the mouth of the Captain of a three-masted fore-and-aft schooner: "Close-haul the mizzen staysail and set it." Another author gives the helmsman this course to steer: "East by Southeast." Take my advice: unless you have a practical knowledge of a subject and are as familiar with it as you are with your three meals, don't write about it.

* * *

My weather ear has been open hoping to catch a hail from a man who has the pluck to go into that Rome Race, but so far no cry has come out of the darkness. Surely there must be a few yachtsmen who can spare the time to get away on such a grand run, and who have a boat fit to make the passage. It will be a trip to yarn about for the rest of your days. It is longer by one thousand miles than any race ever attempted, and to a port that never was sailed to from this country before. If any man has the boat and will put her in I wish he would give me a hail.

* * *

About one year ago we startled the world with a boat called Viper, and next month we are going to raise another bunch of trouble with something entirely new in the speed-craft line. Mr. Hickman, who was responsible for Viper, has designed something that will completely revolutionize the present practice, and that completely upsets the theories of many earnest engineers and scientists. No doubt he is theoretically wrong and that it can be proven mathematically that he cannot do what he claims, but as he only intends to tell in words and pictures what he has done we will forgive him. Theories are sacred things; they are idols which men set up to blindly wor-

ship, and people who deliberately heave rocks, knock over and break them should be frowned upon. Of course we must admit that experience and practice are useful, but they can never compete with theory in advancing an art or science. It is difficult and toilsome to establish a fact, whereas theories can be built up without either excessive toil, or incurring the danger of wet feet. For centuries the wise men theorized in regard to the shape of the world. They proved it was flat. To do this it was not necessary for the monk to leave his cell or the philosopher his arbor, but Magellan foolishly took the trouble to sail around the globe to establish the fact that it was round. What a waste of time! I have sailed thousands of miles on the ocean to prove that small boats are seaworthy, when with a few models and a washtub I could have satisfied my own mind that my faith in small craft was not misplaced. Let us hope that Mr. Hickman will not deal too roughly with some of our pet theories, because we love them and will cling to them in spite of all proof.

* * *

One of the ghosts that continually walk in my castle is the "How many yachtsmen" question. This is asked once a month at least, and I am getting tired of exorcising the spectre, so let this lay it for some moons. First, what do you mean by a yachtsman? Do you mean a man who owns a yacht, or a man who belongs to a club, or a man who sometimes sails on a yacht, or who wears a yachting cap or which, what and why? Enrolled in all the clubs of the world are about 100,000 members; of these about one-third are active men. This one-third are boat-owners, owning, say, 30,000 craft of one ton or larger. Outside of the clubs are perhaps another 50,000 who are interested in yachting and of whom about 20,000 own boats of some shape or other. From long study I have decided that in the United States approximately one man in a thousand is interested in yachting. There is a higher percentage in some of the smaller countries, but as they have few organizations it is difficult to get at the percentage. I have recently canvassed a selected number of clubs to find out how many club members buy yachting or boating publications, either regularly or irregularly. The answer is 28%. Yachtsmen are widely scattered and are comparatively few. We have found this out by advertising in general publications. I recently put an advertisement in a paper claiming a circulation of a million and a half; the result was that of the million and a half, only five-thousandths of one per cent. of the readers were interested enough to reply.

* * *

What interested me most in the boat show was a skiff built to go up shallow rivers which the builder called a rift-climber. There is a big market for some sort of a craft that can walk up rapids, especially in Central and South America and the Far East. In my youthful days I had a strong liking for running rapid streams, on rafts, and in boats and canoes, and it certainly was fun; but getting back upstream was anything but a pastime. The minute I saw this rift-climber I was interested and thought what fun we would have had with one of them years ago. The man said this boat would climb anything, even a tree if the bark was wet. Another good thing I saw was a starting device made by the Hilton Company. This is a machine for cranking an engine, and I sincerely hope that it will be put on all engines that are catalogued to start on the first turn. Such a device will

no doubt lighten the labors of the Recording Angel. I want to call the attention of the windjammers to the Columbian rope; this is just what you have been expecting to get for sheets and halyards, and I want you all to use it. These people have come in and are helping to support the magazine and I ask all my readers to buy their cordage. Of late years there has been a lot of poor stuff sold for running rigging, cursed stuff that when wet was like telegraph wire and would not render or coil. This Columbian cordage is pliant, flexible, wearing, and strong.

* * *

You people who are not reading *The Cruiser* are missing a lot of good stuff. The last volume is chock-a-block with interesting tales of the high-sea and low-sea. The other night I was reading one of the back volumes, and found the yarns interesting even if twice-laid stuff. In this year's passage I have run down and boarded a parcel of lively writings, some old and some new, but all of the kind that the adventure hungry like to see spread before 'em. If any man has a good yarn or knows of a good yarn let him come aft with it. There must be a lot of good stuff knocking about in old publications that can be worked up again. The long yarn for this year is the tale of a boy's voyage in a square-rigger and gives a good, clean view of sea-life fifty years ago. Send in a dollar and get *The Cruiser*; you won't regret it.

* * *

The small racing sailboat is being built everywhere this season, and will do wonders to liven up the sport. At St. John, N. B., they are starting a fleet of clipper dories, and will make special efforts to get the young fellows to join the club and sail them. In Europe the 14-foot dinghy has been chosen to receive international honors, and a regatta will be pulled off shortly in which boats representing several nations will join. One advantage these small boats have and that is, they can be shipped by boat or rail anywhere, and so interclub or international contests can be held at any reasonable distance, and at not too great a cost. For clubs on small lakes they are just the thing, as they can challenge and meet clubs on other small lakes, and have some experience either in beating or being beaten by strangers. Racing confined to one club on a small sheet of water is apt to degenerate into a family affair and to end in wrangles and bad feeling. A little dose of stranger now and again will help to keep things sweet and quiet.

* * *

If you are going into any of the long races this season, listen to what I am saying, and don't forget to make use of the lecture. What spells success in these races is preparation. Not preparation of one thing, but of the whole blunderbuss—lock, stock and barrel. In sail-craft see that your boat is in proper trim, and don't go to sea with her head up and stern down or contrawise. See that the standing rigging is in good shape, not by inspecting it from the deck, but go aloft and look it over carefully everywhere. Lift up the splices, and if necessary open the parceling and look at the lay where it has been covered. See that the cheeks are firm, and that the splices are not eating into the spars, and that both sides are bearing even. Twice in ocean races I have had the rigging come down after being assured by owner and skipper it was in first-class shape. Look to your bobstay and all the bowsprit gear. Overhaul the

blocks and turnbuckles and give them a good oiling. Look out and spot any chafes, so that you can put chafing gear where it will be wanted as soon as she begins to work in a seaway. One night of tossing and-rolling will see a spar half-cut through if played against a wire rope. Above all get your deck openings tight, and your steering gear in the best of shape. Look carefully to the whole helm, from rudder heel to wheel, and take up any play where you find it. Nothing is so annoying at sea as a loose rudder or rattling steering gear; and last, but not least, look to the pump and limbers.

* * *

In power-craft don't think because you have an engine that runs and gives no trouble in harbor, that all your preparations are made for going to sea. Lots of you do. An engine may give perfect service when running on a level, but just get it out where it stands on its head and tail ten times a minute and see what happens. Have automatic lubrication; have an auxiliary tank fuel feed; have a clean, clear engine room; have proper ventilation, and have a pump that will keep the water down at all times. Have a system of lighting that will light; have your piping, tanking and shafting so that you can get at all parts of it readily, and keep it constantly under inspection. See that your deck openings can be closed and made absolutely water-tight. See that the steering gear and tiller ropes are get-at-able. Have a stout railing and life-lines, a good compass properly adjusted, and plenty of fire extinguishers both below and on deck.

* * *

Don't go to sea in any boat without sufficient stores and water aboard to last the crew for at least thirty days, if the voyage takes you any distance offshore. A breakdown may mean weeks before you are picked up or drift in. One of the boats last year in the Habana Race went to sea with just food enough to last for five days, and had she met with a mishap the crew would have suffered terribly and perhaps have been starved to death. If you don't want to bear the expense of properly equipping and storing a boat, don't go into these long races; it is a sport for spenders, and no pastime to swap dead horse in. Give your crew the best grub money can buy and lots of it, and what they can keep down they will bless you for. Hungry and half-fed men are growlers and kickers, especially if they are doing your work for nothing. To keep them happy, make them work, eat and sleep.

* * *

Now it is no use going into these races and expecting to win with underpowered boats of any description. You must have sail and you must carry it. You must keep your boat moving at all times at her best speed. With a short rig you can't do this, and what is lost in bad weather or head weather you cannot make up in good weather or free winds. The same with power-craft. Get plenty of engine. A full-powered boat will hold her own in bad weather, and when it comes good make up the lost time. Again, with a full-powered craft you can hold a course, but with a low-powered you have frequently to compromise with wind and sea, and make the best track possible. Fast boats are better sea-boats

than slow ones, for the reason that they are more under helm control; they are also wetter, but that is part of the game.

* * *

One thing all committees should see to and that is that all entries have proper boats or rafts for salving the crew. This is a condition that in the past has been mostly honored in the breach. Some day if this precaution is neglected, there will be a disaster, and the sport will get a bad knock. If a vessel cannot carry the proper apparatus to save her crew, she has no business in the race. I admit that in boats 40 feet and under it is a problem difficult to solve, but in larger craft there is no reason why they cannot carry two boats capable of at least giving a crew a few hours' chance for their lives.

* * *

The Bermuda Race for sail-craft starts from Boston, and entries should be sent to the Boston Y. C. It will finish at St. Georges, and the yachtsmen will be looked after by the St. Georges Y. C. The power-boat race will start from New York, and be handled by the Motor Boat Club of America. The boats will go to Hamilton as usual. The Brooklyn's long race will be to Halifax for cups presented by Commodore Hearst, and is open to power boats 45 to 80 feet over all.

* * *

Another long race will be run between New York and Camden, under the flags of the Camden Motor Boat Club and the New York Motor Boat Club. There will also be a race from Middletown, Conn., to Huntington, L. I., under the flags of the Middletown and Huntington clubs. On the Great Lakes the Scripps Trophy will be raced for, and then the famous Block Island Race is on as usual. Several other races are scheduled, including the Brooklyn's Cape May and two or three for large schooners under other club flags.

* * *

On the whole the outlook for a lovely season seems to tail up like a number one mackerel. Some people think the sport is going bad. I don't. "Yachting is not what it used to be," growls the old piazza hooker. "Not the sport it was when I sailed thirty years ago." Well, it isn't, old boy. It is an entirely different kind of performance. There is less comedy and tragedy, and more dancing and music. In the good old days the professional used to be the dog and the amateur the tail; now the amateur is pretty well the whole animal. Twenty years ago everybody paddled in his own puddle. Club regattas, club races, club dinners, club gatherings were just club events. Outsiders were admitted, tolerated and forgotten. There was no real sport feeling. If a stranger was permitted to enter a race, he was given to understand that it was as a favor and not as a right that he was allowed to compete for their prizes, and that his winning one would not meet with the approval of the donors. But to-day a man, if he behaves, is welcome everywhere, and hospitality and comradeship are watchwords over the doors of nine-tenths of our clubs. No matter where you race, it may be a hundred miles from home, you will be sure of a fair deal, and receive a warm welcome on coming and a hearty cheer when parting, whether you win or lose.

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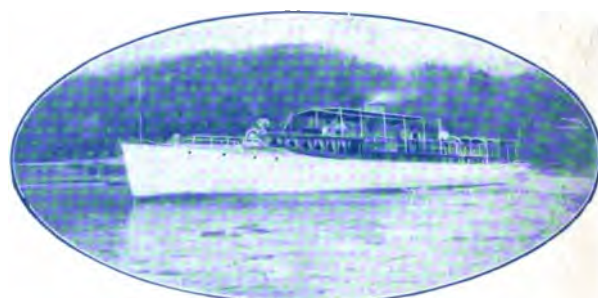
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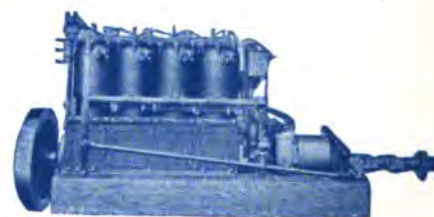


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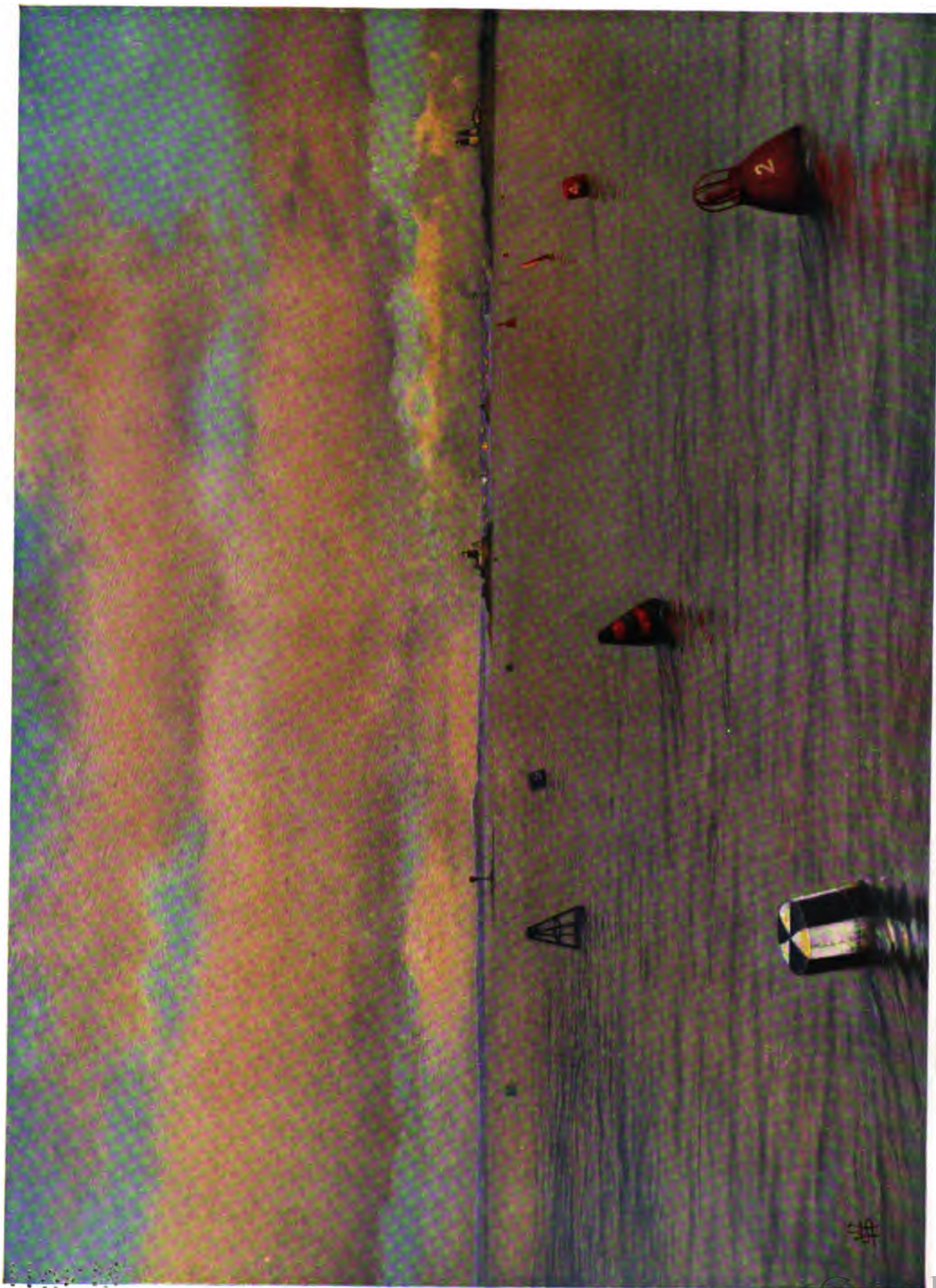
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Buoys of United States Waters

From a Painting by Warren Sheppard

The Rudder

Edited by THOMAS FLEMING DAY

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CUTTING OFF CAPE COD

Winfield M. Thompson



P

OWER - BOAT cruisers—may their tribe increase—whose fortunes are cast in the pleasant courses of the North Atlantic coast, will find by the opening of the season of 1913, and possibly by the end of 1912, a new route open to them from the waters that lie south of Cape Cod to the cruising grounds of Massachusetts Bay.

By means of a cut of nine miles across Cape Cod, the distance between Long Island Sound and Boston will be shortened

about 75 miles, while more than 100 miles of dangerous navigation, through Vineyard and Nantucket Sounds, and over the shoals off the Cape, will be eliminated. As marine records show, and most yachting men of to-day are well aware, this hundred miles of navigation has few parallels in danger among all the navigated waters of the world. Its yearly harvest in human life and in property is not perceptibly lessened by modern protective and life-saving devices. You may put as many buoys and lightships as you like on the Shoals, establish wireless on all steamers passing over them, patrol the sandy coast of the Cape hourly with life-savers, and you can make small impression on the hungry old sea when it wants a victim. This was shown no longer ago than in January, 1911, when in a single hour seventeen men went to their end on Peaked Hill bars through the parting of a hawser between a tug and a tow of three coal barges. The sea made kindlings of the barges before the eyes of the life-savers, who could not launch a boat or send a life-line over the wrecks. In an hour after the barges struck, the corpses of their crews were coming in on the beach.

Small wonder, then, that men have dreamed for two centuries of a means of evading the shoals and fore-shore of the Cape. As long ago as the early days of Plymouth, the old traders of the Pilgrim town avoided sending their ventures by sea around the Cape whenever they could, and carried their goods destined for the settlements to the South across the land from one bay to another in transit. Their shrewd eyes spied out the spot where such a carrying of weight could be accomplished with the least labor; and it is along the line of their old "tote" road that the present canal is being dug, at a cost stated to be about \$12,000,000.

Cape Cod has been called, by no less authority than the naturalist Thoreau, "the bared right arm of the Commonwealth" (of Massachusetts). As you may see from a glance at any map of the United States, the figure is a most happy one. The arm is bent, as if to strike a blow. The fist is the end of the Cape, with Provincetown at the thumb. The elbow is Monomoy Point—the Cape Malabar of the early travelers by sea in those parts. The shoulder is where the canal is being cut, near to the body of solid land that runs in a ridge from Plymouth southward to Buzzards Bay. In this shoulder of the Cape, like a vein, there has always been a thin watercourse to either bay. Their sources meet in the center of the Cape. One runs Northeast, the other Southwest.

Through the valley of these streams, with the highlands of what we may call the mainland overlooking them like a wall on one side, and the rolling sand hills of the Cape stretching away on the other, the route of a canal seemed to have shaped itself by nature. At various times in the past—the last time not more than a quarter-century ago—men fondly thought they could cut a ship canal here at low cost. Proceeding on this theory they floated companies, and bonds, and such things that grow up and perish, but they floated never a vessel in their ditches. The last ditch, fully a mile long, lay in the marshes on the north end of the valley like the grave of dead hopes, when the present canal company, financed by the sons of Abraham of New York, who

know not the word failure, took hold of the undertaking of cutting off Cape Cod.

At the bay end of the old cut the beach had been pierced; but the drifting sands of a few Winters had sufficed to fill in the cut. The first task of the new company was to clear it out, and introduce into the old cut a powerful dredge. This, and others that followed, were soon a mile into the Cape. It was really simple digging. The old trouble had been with sinews of war rather than with problems of construction.

But the purpose of this article is not so much to describe the digging of the canal, as to tell the cruiser what its construction means to him. As the canal will be large enough to permit the passage of the largest coastwise steamers—with a surface width of 250 feet, a bottom width of 125 feet, and a depth of water of 25 feet at low tide—and as it will have no locks, the average pleasure cruiser will find it, by reason of its character and surroundings, one of the most picturesque artificial waterways in Northern America; while the beauty of its approaches, and the variety of harbors in the two bays the canal connects, will make a cruise to and through it one of the greatest charm imaginable. Already the yacht clubs along that part of the coast are planning cruises through the canal for 1912 or 1913; those of the North southward, and those of the South in the other direction.

Cape Cod has always presented an effectual barrier to free intercourse of yachtsmen South and those North of its sands. Cruisers with plenty of time, and lone voyagers who like a spice of adventure in their Summer sailing, certainly have rounded the Cape in numbers; but a general mingling of the yachtsmen of Massachusetts Bay—who number about 10,000—with those of Buzzards Bay, Narragansett Bay and Long Island Sound, has never taken place, by reason of the time required for the passage around the Cape, and the discomforts and uncertainties of the voyage.

The canal not only will prove a link between the yachting communities named, but will serve also to give the cruiser, in the course of a few hours, a complete change of scenery, and, one might also almost say, of climate; for the Cape presents a different sort of weather on its



Cuttyhunk. The Village on an Early Spring Day

South side than on its North. There is a difference in the temperature of both air and water; a difference in the amount of suspended moisture in the air; a difference in the strength and duration of winds, and a difference of nearly five feet in the rise and fall of the tides.

In Buzzards Bay there is a great deal of light fog in the Summer months, when the weather may daily be clear in Massachusetts Bay, a dozen miles Northeast. In Buzzards Bay the wind blows from the Southwest with marked regularity in Summer, particularly in the afternoon; but it is not beyond the range of possibility to find it East in Massachusetts Bay at the same time that it is Southwest in Buzzards Bay. The air is much softer in Buzzards Bay, and the climate generally more genial. In passing through the canal, therefore, the cruiser will find herself, at its northern mouth, entering the climate of the North, which for crispness and bracing qualities may be said to attain perfection on the coast of Maine.

Assuming that the owner of a power cruiser starts for the canal from New York, let us see what waters he would plough to reach Boston by way of the canal, and what harbors would invite him to a stay after he has reached Buzzards Bay.

Putting out from New Rochelle, we will say, at eight in the morning, he can harbor that evening in New London or at Greenport. (The latter is the more picturesque, being an old whaling town with a Dutch twist.) Next day he may make a two-hours' run to Block Island, stop a while among its genial and picturesquely profane boatmen, and in the afternoon make a comfortable run of 31 miles to the harbor of Cuttyhunk. Such a course cuts out Newport, but that can be taken in on the return voyage.

Leaving the East Harbor of Block Island you may shape your course for Vineyard Sound Lightship, E. by N. $\frac{1}{2}$ N. The distance is 27 miles. Should the weather turn thick you should approach the lightship with great caution, for if you overstand it you will find yourself on the Sow and Pigs reef, whose rocks have picked up a great many vessels.

You leave the lightship to starboard—instead of to port as you would in entering Vineyard Sound—and giving it a good berth, run along the shore of Cuttyhunk, which is bold, until you pick up any one of five buoys that lie off the North end of the island, and between it



Near Hadleys Harbor, Naushon



At New Bedford. Bending Sails on a Whaler

and Penikese Island. These buoys mark ledges, but they are in smooth water, and none of the rocks can pick you up. Once hold of a buoy, your chart will show you the next, and you can pick your way to the entrance of the harbor. It is better, however, to make a wide circle toward Nashawena Island, until you are heading Southwest, and for the entrance of the harbor jetties.

Until 1910 no cruiser strange to Cuttyhunk cared to risk entering its harbor except at high water; but in that year the jetties were completed, as well as a dredged channel and anchorage basin, with a well-built wharf. The channel opens to the Northeast. You enter halfway between the jetties and follow the beach until you enter the harbor proper. The channel here turns to the South, or port hand, in a half circle. It is well buoyed, and deep enough for the steamer that brings the mail to the island from New Bedford to run up to the wharf; a fact that was at first a marvel, in a place where a catboat under power could not always negotiate the channel at low tide before the dredging.

As your first port in the new territory on your way to the canal, Cuttyhunk is well worth while. The island is rugged and treeless, with huge boulders, like herds of great animals turned to stone, scattered about its bare pastures. It is the most seaward of the Elizabeth Islands, separating Buzzards Bay from Vineyard Sound. There is a small village, with a store; a club for city men fond of fishing; a life-saving station, and on an islet in a pond on the West side of the island a monument commemorating the alleged landing here of Bartholomew Gosnold in 1602.

From Cuttyhunk to the entrance of the canal is 24 miles E.N.E., through the greatest length of Buzzards Bay, which has an average width of seven miles, and an average depth of seven fathoms. Owing to the latter fact, there is sometimes a short, rugged sea in the bay; but as a rule in Summer it is smooth. If you are in no hurry, a day can be spent to good advantage cruising in the lower bay, with a night at New Bedford. You can go first to Hadleys Harbor, on the North side of Naushon Island. The shores en route are bold, with no outlying ledges, and the scenery of Nashawena, Pasque and Naushon, with their rolling uplands—much like the old-country heather—is extremely pleasing. The way into

Hadleys is not clear on the average chart, but is shown plainly on chart No. 348 of the U. S. Coast and Geodetic Survey, which can be bought of any dealer for 25 cents. It will be worth your while to get this chart, and visit Hadleys, which is one of the beautiful spots of the earth—a perfect little harbor embowered in oaks. You can dig clams here, and perhaps buy lobsters of a friendly old Portuguese fisherman from New Bedford, whose boat usually lies near the entrance of the harbor in Summer.

After lunch at Hadleys you can run over to Woods Hole—follow the buoys; the tide runs eight miles an hour at its strongest—and there visit the United States Fish Commission's station. Thence you can go back into Buzzards Bay, and giving Long Neck a fair berth, on your starboard, swing around and enter Quamquisset Harbor, locally known as Quisset. This is a charming little punchbowl in the sand, surrounded by Summer residences standing on high land. The entrance is well buoyed, and there is 19 feet of water in the punchbowl, with a clean little beach on the west side for bathing.

There are other little harbors on the same side of the bay, but it is not advisable to seek them out unless you have plenty of time. A better idea would be to cut straight across the bay from Quisset to Dumpling Rock Light, the course being about W. by N. From the light turn N.N.W. and run along the interesting rocky shore of Nonquit. It was in one of the cottages here that General Phil. Sheridan, the great little cavalry leader of the civil war, passed his last days.

Your course will take you inside the breakwater of Padanarum—pronounced with the *a* flat—where you will find plenty of water and a good anchorage among yachts. The New Bedford Y. C. has a station here, where cruisers are welcome, and there is a trolley line to New Bedford, about 20-minutes' ride away. If you do not care to patronize the trolley, get up your hook after a short stay and run around to the old whaling port itself. The way is perfectly clear. Steer for Clark's Point, give it a fair berth, pass inside Butler's Flat Light, and pick up the harbor buoys. Arriving in port, run up the side of the harbor opposite the city, and let go anchor off the station of the New Bedford Y. C., which is on an island midway in the span of the long bridge between the city and Fairhaven.

From your anchorage you may row over to the city wharves, where there are still to be seen whalers fitting



The Yacht Anchorage, New Bedford



Where the Canal Will Pass, Near Bourne

out, and where you may buy a live fish from the well of bay catboat, or the tank of a dealer at the head of a dock. There are two first-class social clubs in New Bedford, and it is, beside, a good town in which to replenish stores. It has several excellent grocery stores and markets.

On the same side of the bay as New Bedford are three harbors that will repay a visit—Mattapoisett, Sippican and Onset. The latter is near the mouth of the canal. On the opposite shore is Monument Beach, where a good many small yachts and launches are owned.

On leaving Monument Beach you will quit Buz-

zards Bay, and enter the canal, which at first follows the bed of the Manomet, or as it is called locally, the Monument River. A mile from the bay the canal will pass through the village of Bourne, and two miles from its northern end the manufacturing village of Sagamore, where car-building works line its right bank for more than half a mile. Beyond that point it passes through marshes to the beach. The old town of Sandwich—once noted for its glass works, and near a century ago the favored resort of Daniel Webster when he went down to the Cape to shoot and fish—is about a mile off the line of the canal, on the right.

The mouth of the canal cuts a crescent of white beach that is more than fifty miles long—the bight of Massachusetts Bay. The water is shoal for a long distance offshore, gradually deepening from four fathoms at the end of the long granite jetties off the mouth of the canal. In a Northeast blow a meaner place does not exist. There is no harbor nearer than Plymouth, 15 miles away. There is, to be sure, a little opening in the beach just to



In the Middle of the Cape



Railroad Bridge Over Canal, Buzzards Bay End



The Cut Through the Beach, North Outlet of the Canal

the west of the canal jetty, known as Scusset. This has a winding, blind entrance, that cannot be seen half a mile distant, and is almost bare at low tide. It has no value whatever as a shelter, though it leads to a considerable opening in the marsh.

On leaving the canal, therefore, the cruiser will do well to shape his course for Plymouth. The land on the port hand is high and blue, a sure guide to the course, which is N. $\frac{1}{2}$ E. $8\frac{1}{2}$ miles to Manomet Point, a spur of boulders projecting seaward from the base of Manomet Hill, which rises 390 feet above the bay.

The point must be given a wide berth, but as there is a buoy well off the shore, and outside a pair of great brown boulders that show at low tide, there can be no danger so long as it is left to port.

In fact, on the entire course from the canal to Boston Light—41 miles—the rule is to give the port hand a berth. In the prevailing winds of Summer it is a weather shore, and the warm westerly winds bring off the land a compound of delightful scents of forest and field; but in the easterlies, common to that part of the coast, it is an uninviting lee shore. Therefore the stranger cruising here—and as yet it is new territory for cruisers—will follow the chart faithfully, on peril of fetching up on some isolated boulder lying from 100 yards to 300 yards offshore.

After turning Manomet—where there is a life-saving station and a colony of cottages on a bluff—you open up a delightful little Summer colony, on a steep hillside above a stretch of white sand, that is known as White Horse beach. On a fine Summer day, when the wind is westerly, it is worth while to stop here, cast anchor and

go ashore, if for no other purpose than to climb to the highland above the nest of box-like cottages, and take a long look seaward, and up the coast. The jetties of the canal are still within your range of vision, but scarcely distinguishable against the gray of the beach, which fades away in what seems an interminable curve, toward the East. Up the coast are various conspicuous landmarks, now little known to the cruiser, that in time will become familiar guide-posts on the new road to Boston.

Nearest of these is the Gurnet, at the entrance of





Type of Rock Work on Canal Jetties

Plymouth harbor, a point terminating in a yellow-faced and grassy bluff, on which are a pair of low white light-houses.

Your coast pilot describes the lights—they are white, fixed—and the buoys for entering Plymouth harbor. From Manomet you run N.N.W. 5 miles to pick up the whistler that lies half a mile off the Gurnet. Thence you turn almost at a right angle to the westward, and shape a course W. $\frac{1}{2}$ S. to enter Plymouth harbor. After passing the Gurnet lights, giving the point a good berth on the starboard hand, you will find anchorage in the roadstead, along with a lone coaster or fisherman who may be there waiting for a shift of wind or a tow. If you wish to go up to the town you must push on four miles further. Two of these are on the course given, bringing you to near the Duxbury Pier light, which is left to starboard. Here by following the channel buoys you find you have turned another right angle, and are heading southward in a good channel on the inside of a long sand spit. If it chanced to be high tide Plymouth harbor appears like a wide expanse of deep water, and you are inclined to cut straight across from the end of

the spit to the town. If, however, it is low tide, you will see in place of the water a wide expanse of greenish-brown flats, covered with eel-grass and shimmering in the sun like polished bronze. Local fishermen cross the flats at half tide in coming and going, but it is not safe for the stranger to attempt it, particularly if he has a wheel that feeds with avidity on grass.

By following the channel you will find plenty of water. When directly opposite the town the channel takes another right-angled turn, for a stretch leading W.S.W. to the public landing wharf, at the head of which stands Plymouth Rock.

There are always plenty of free and independent citizens of ancient Plymouth—now largely speaking with an accent that tells you they have not been strangers to Italy or the Azores—who will lend a cheery hand in taking a line. You may tie up to the dock for the night without fear of molestation. A fisherman or two may bump against you in the morning, when at dawn the power-dory fleet goes out to the nearby netting grounds; but you will not be harmed, and will spend a serene morning thereafter.



Manomet Point, South of Plymouth



The Gurnet Lights, Entrance of Plymouth Harbor

There is a yacht club at Plymouth, two docks above the town landing, but there is no water at its float at low tide. The members are hospitable, and are looking forward to booming times when the canal opens and a hundred cruising yachtsmen come into the harbor where but one comes now.

The next port North of Plymouth, for the 'longshore cruiser—Duxbury being at the head of the Plymouth inlet of the coast—is Green Harbor, six and a quarter miles above the Gurnet. You can follow the beach, passing inside High Pine ledge. The course is N. by W. $\frac{1}{2}$ W. Two conspicuous artificial landmarks are to be observed on this part of the coast. One is the tall granite shaft of the Myles Standish monument, standing about a mile back from the beach, in Duxbury. The other is a great skeleton steel mast of a private wireless experiment station on Brant Rock Point, at the entrance of Green Harbor. This mast is more than 400 feet high, and can be seen a long distance. By steering for it you will come directly to the entrance of Green Harbor, which opens to the Southeast, just West of wireless station.

Green Harbor is a mere hole in the wall, with only water enough at low tide for a small boat to get in; but

at half tide the ordinary cruising power boat drawing not above four feet can enter with ease. The place was once a relatively good harbor, but it has filled with sand in recent years. It is in the town of Marshfield, where Daniel Webster made his home, and one of its treasured traditions is that Webster kept here the little schooner yacht in which he made many and famous fishing expeditions. The fishing off the harbor is good, and would well repay the cruiser fond of casting a line for tautog, flounders, plaice, cod and haddock. The fishermen at Green Harbor are fine Yankee types, and sell their catch—except lobsters, which are always dear—at moderate prices. They are also genial and kindly with the stranger, and ever ready to give advice on how to take the channel of Green Harbor.

Here I may as well say a word about the charts for this part of the coast. They are poor. The Government charts for the section between the outlet of the canal and Boston are known as No. 109 and No. 110. They are on a fairly large scale, but there is a gap between them that is apt to tangle up the amateur navigator completely if he has not been warned to look for it.

This gap leaves out entirely Green Harbor, as it



The Docks at Plymouth. The Rock is at the Head of the Pier on Right of the Schooner



Plymouth Rock

begins at Howland's ledge, lying Southeast of the harbor, and continues $4\frac{1}{4}$ miles, to a point on the beach below Humarock. Why the Government should have issued such imperfect guides is a puzzle for the cruiser who looks in vain for Green Harbor as he follows on the chart the course along the Massachusetts coast. There is a small-scale Government chart for the entire bay, and as far offshore as Georges bank, known as No. 7; but this scarcely shows the little harbors along this part of the coast.

The cruiser entering Green Harbor therefore will have to fall back on Eldridge's chart D until the Government makes a new survey of the coming highway alongshore to Boston, and issues a proper chart of it.

Above Green Harbor you round Brant Rock—a detached ledge well above water, once a favorite gunning neighborhood—and follow the beach, which is low and white, N.N.W. for six miles before reaching the next opening in the coast, the new mouth of the North River. Half a mile back of the beach the country rises in beautifully wooded hills, and is dotted with fine country places; not the villas of the very rich, but the everyday homes of people who love comfort without display. Owing to the character of the trees on these slopes, which number a good many cedars and hemlocks, and a great growth of juniper, the coloring of the landscape is here peculiarly rich and striking.

Before reaching the mouth of the North River you pass Fourth Cliff, which presents a yellow clay front to the bay to the height of about 60 feet. This can be seen a long way from land. The beach here is

strewn with outlying boulders, and has picked up many a good vessel.

Back of the beach and cliff the North River formerly flowed to an outlet a mile and a half below the cliff, in the town of Marshfield. Now it reaches the sea in the town of Scituate, and its old course back of the beach is a tidal lagoon. This change in its physiology was effected in a single night, during the great storm of November 27, 1898. In that storm more than 200 vessels were lost on the New England coast, and the shores of Massachusetts Bay were strewn with wreckage. The greatest single disaster of the night was the loss of the passenger steamer Portland, which foundered in the bay, with all hands, about 170 souls. In all that part of the coast the cruiser will hear that great blow referred to as "the Portland gale."

The greatest physical change in the coast-line wrought by the storm was in the beach between Fourth Cliff and Third Cliff. The sea made a breach here which permitted the North River—a stream on whose shores were built in the century following 1750 or thereabouts more than 1,000 ships—to enter the bay at the very point where 60 years before the old ship-builders had asked Congress to cut an artificial outlet for the river, and for their ships.

The new entrance at the time of my last visit to it—1910—was not charted, but in the course of a week's stay there I made a study of it which may be of some assistance to my fellow cruisers. The opening is directly at the northern end of Fourth Cliff, and at right angles with the coast-line; but in entering one must



South from Fourth Cliff

give the cliff a good berth, on account of sunken boulders. There is about six feet of water on the bar across the river's mouth at low tide. In an easterly blow the entire mouth of the river breaks, but in ordinary Summer weather a power boat can enter with perfect safety. If you like poking about in unusual places, a visit to the river in itself would repay you for a cruise through the canal. In the absence of official sailing directions, the following may serve:

Open out the mouth of the river until you are directly opposite the center, or rather North of it if the tide is low. Then run for a large, clear hay field, with trees on three sides, that is a conspicuous landmark on the side of a hill about a mile inland. The course will be about S.W. Hold this course until the line of the beach to starboard is at right angles abeam. Then head up to the westward until pointing directly for the center of the river. You must give the South side of the channel a berth, for there are sunken rocks here. The North side is sand.

When you are inside the mouth you will see a channel to the Northwest, and one to the South. The former is the present course of the river. The latter is the old channel. This old channel is divided by a marsh island. There is anchorage ground on either side of the island, but the better is to the West, for boats of 40 feet length or more, as there is more room to swing.

Either of these anchorages is snug and comfortable. Eastward is the back side of Fourth Cliff, rising from marshes. Westward is a small island in the marsh with a few cottages on it, and a bathing beach; and beyond rise the Marshfield hills.

A more fascinating spot in which to spend a day or a week cannot be imagined. The air is pure, the scenery beautiful. The water is clear and pure, and warm enough for pleasant swimming. There are clams in the flats along the old river bed, flounders to be had in abundance by dropping a line anywhere, and sea fish directly off the bar.

An excursion up the river, to the pretty country town of Hanover, will repay you. There is only one shoal spot in the stream, and that is about six miles from its mouth, but it can be passed by a boat of four feet draught. There are two bridges near the mouth of the river. The first is a railroad bridge, and in 1910 a day's notice was necessary if you wanted it opened, pending the building of a new bridge, made necessary by the

development of power boating in those parts. The other is an ancient highway bridge. Here you pass the site of several old shipyards. In one just above the highway bridge on the right was built the ship *Columbia*, which first carried the flag around the world, and gave her name to the mighty river in the West which her captain believed he discovered. Farther up, in Hanover, was built the ship *Bedford*, that first displayed the American flag in an English port, and also the brig *Beaver*, one of the vessels that carried the offensive taxed tea to Boston, at the beginning of the trouble with the mother country.

One must be more or less of an antiquarian to find the spots thus celebrated; but even if you miss them you will be repaid for your inland voyage from the mouth of North River. The scenery all along the stream is peculiarly pleasing. The banks of the river are well wooded, and the uplands present a diversity of farms, country places and wooded slopes. Nearly all the houses in this section are of the generous Colonial type, surviving the old days of the ship-builders hereabouts, and in excellent state of preservation. Many have been taken for Summer homes by city people, but they still retain their early character. So also does the countryside as a whole, and on looking back at it as you pass down the river, you cannot help feeling that here is a corner of the Old Colony of the Pilgrims that has resisted to a marked degree the smoothing process of contact with the modern world.

While lingering at North River you will climb the side of Fourth Cliff many times, to gaze seaward from its bold scarp. A path runs along the edge of the turf, beaten hard by the life-savers' patrol. It is so near the edge that one marvels that a man can walk it on a dark night and not lose his footing. A misstep would land him sixty feet below, on the coarse gravel and stones of a particularly hard beach.

From the top of the cliff at low water you can see the boulders that lie hidden just beyond the tide line. When a surf is making up on the beach—and that is most of the time—a cockling of green and white, or a smooth, shifting mound of water that appears and slips away without breaking, shows you where each of these rocks is. They are quite harmless to the Summer cruiser, who may lie near one of them a whole tide if he likes, without fear of trouble, and fish for sea perch—or cunners as they are called on the northern coast—with promise of as fine a meal of panfish in reward for his labors as one could catch in the whole seven seas.



North from Fourth Cliff

On the South end of the cliff, in a sort of hollow back of the beach—a great windrow of gravel stretching with a slight curve all the way back to Green Harbor—is a life-saving station. Near the station, at the time of my last visit here, lay the wreck of a three-masted schooner, the *Helena*. A fine, well-built, sturdy craft she was when she came on the beach one snowy morning in January a year before. The life-saver patrolling the cliff had seen her coming, and had vainly tried to warn her off. She came sailing straight for the spot where she was to lay her bones, with all plain sail set and eased sheets. The life-saving crew was astounded; but when the vessel struck they were ready with their gun, and in a few minutes they had a line over her. All hands were taken off in the breeches buoy. Then the captain told the extraordinary story that he had thought himself North of his course in crossing the bay from Cape Cod, and had kept off to run into Boston. Great was his surprise when he saw the cliff looming ahead of him. He was nearly 15 miles to leeward of the entrance of Boston Harbor! The vessel's cargo of Southern timber was saved; but after the boulders of the beach had penetrated her bottom, all hope of moving her disappeared. Thenceforward she began to work up toward the cliff and burrow in the gravel; and when I visited her to get some clear pine

wood for my Shipmate range, I could vault upon her bowsprit from the beach.

Possibly my reader may think I have tarried o'er-long at Fourth Cliff and the North River. Mayhap. Yet this is one of the oddest corners on the Massachusetts coast that the canal will make familiar to the cruiser from Southward; and if there be many in the power-cruising fleet as fond as I of nosing about out-of-the-way holes in the wall, North River will prove a popular port of call when once the new highway from the canal to Boston is in full use. The river's mouth is barely 21 miles from the Boston wharves, as the bird flies; yet its neighborhood is entirely primitive. By the breach in the beach that gave the river its new outlet Fourth Cliff became an island and it now being difficult of access to the paper-bag tourist, its isolation makes it a place of charm to the cruiser.

Your next harbor above the river—and one that the conservative cruiser will use more than the river itself—is Scituate, not a mile distant. The entrance is between jetties, that open to the Southeast. On the Eastern, or outside jetty is a light on an iron spindle. At the land end of the jetty is a dismantled lighthouse tower, that went out of commission when the light was first started in Minot's tower, on the ledges offshore. That was in 1860. The old tower has since served only as a



Fourth Cliff and Mouth of North River



Scituate Breakwater and Harbor Entrance

landmark for Scituate harbor. By running for it until you open up the entrance ahead, and then steering boldly in, in a wide curve from a northerly course around to Southwest, you will find yourself in the center of the harbor, known locally as "the deep hole." The proper place to anchor will be indicated by the presence of local boats of good size at their moorings. Stick close to them, and you will avoid swinging into the edges of the flats, and eel-grass, at low tide. The holding ground here is good.

There is but one wharf at the town—a sleepy but picturesque little place—but you are welcome to land at its steps. The shops here are fair, and a walk about the village, and into the nearby country will be well worth while after a few days afloat. In the harbor there still remains some of the fishing life that once supported the town. The fishermen here use still the famous Plymouth lobster boat, about 20 feet long, with plumb stem and overhanging stern, a graceful model with modified V section, centerboard, and a double-sprit rig, with large, loose-footed foresail. So many of these

boats have already been equipped with gasolene engines that to see one under sail—except at Scituate—is a rarity. The fishermen are adepts in handling the boats when hauling lobster traps, and the manner in which they stop and start them by manipulating their sails is a liberal education in boat-handling.

From Scituate the cruiser northward bound will shape his course N. by W. $\frac{1}{2}$ W. $4\frac{3}{4}$ miles to clear Minot's Light tower. It is safe to pass inside the buoy on Davis ledge, outside the light, and go close to the tower itself, which stands on the last of a large group of breaking ledges, off the town of Cohasset. Some of the ledges inshore stand high and yellow above the water, and when a good sea is running the surf piles white about them. It is an ugly-looking place, and the stranger will pass it by. But there is a well-defined channel between the ledges to Cohasset Harbor, a pretty little spot, but entirely conventional and woefully lacking in water at low tide. A man must be a good pilot to take a vessel of any size in here; yet I had an uncle who once got his schooner into the harbor in a snow-



Point Allerton, Entrance of Boston Harbor

storm, and got her so well in that the only way she could be gotten out was to unload her. He had been coming up from Maine with a load of lime, when the storm caught him off Cape Ann. The old hooker wallowed along the best she could, but made so much leeway that the first thing the skipper knew he had the rocks inside Minot's under his bow. This usually spells death. In this case there was a special dispensation of Providence which permitted the ancient craft blindly to thread a passage between those roaring ledges, and land in the sand within the harbor. When the life-savers came off to get the crew they marveled to find the worthy packet still had a bottom in her. But her cargo of lime was so thoroughly wet down it had taken fire, and they had to seal her up to smother the blaze. This took some weeks, and when the cargo was discharged the schooner was laboriously gotten out of port. It was the only case on record of a vessel jumping the ledges inside Minot's in a blinding storm and emerging thence to sail again.

After rounding the tower at Minot's—where the keeper may come out, 80 feet above you, to give you a salute on his bell—you haul up to a course of N. W. $\frac{1}{4}$ W. This will take you straight to Boston Light, distant seven miles. You can see the tall, white shaft of the light tower a long way in clear weather. There is

one obstruction between Minot's and Boston Light—Harding's ledge, which is out at half tide. It is well marked by a bell and gas buoy. You may pass these close aboard, to port, and once past them, haul still more to the westward for the open entrance of Boston Harbor.

Once inside the spit at Point Allerton, you have a choice of various courses inside the harbor. By following the ship channel you will have the company—not always desirable—of all kinds of shipping, from ocean steamers to refuse-dumpers in tow. You can cut their company by the simple expedient of keeping on straight into Nantasket Roads, and thence to the South Boston yacht anchorage by the West Way, which any local boatman will point out to you if you do not happen to have sailing directions for it.

My advice, however, is that at the entrance of the Roads you turn sharply to the South, pass through deep and narrow Hull Gut, skirt the yachts you will see at moorings on your left, and haul up gently but firmly alongside the float of the Boston Y. C.'s Hull station. If you fly the flag of any club from South of Cape Cod your card will insure you entertainment. There is a lofty piazza overlooking the bay, an excellent restaurant, a—well, all the things that should make a cruiser happy.



Spanish Galleons and Caracks from the Book on Naval Architecture by Van Yk, 1691, Who Merely Copied these Vessels, Which Were Probably Dutch, from the Breugel Series of Prints; the Vessels Represented Were in Fact at Least 130 Years Before His Time—Note the Absence of Bulwarks in the Waist

LOG OF TOTEM, 1910

T. A. and C. G. Hine

PART II—(Concluded)



AUGUST 23D.—Davy has an alarm clock which sounds like a load of empty milk cans traveling springlessly over a cobble pavement. This started the day at 5 a. m., and as the Skipper's weather eye approved of the signs which nature hangs up for those who know how to read, Totem began the day's journey at 5:30. The submarines were also getting underway about this time, and in

spite of the dim, early morning light, the camera was fearlessly trained on them. Two more of these were passed at Watch Hill, and two more off Point Judith, and this seemed to be the end of the school.

The day and a smooth sea lent themselves in aid of a good run across to the Vineyard, and the engine never skipped once from Stonington to Vineyard Haven, which led the Skipper to hope that the new carbureter is feeding it a mixture which is satisfactory to its in'ards. The tide was ahead all the way, which prevented anything like a record run, but we passed West Chop at three o'clock, and shortly thereafter picked up our new mooring back of the breakwater. The poor thing had been looking for us for a month, it seems, and was quite relieved at the prospect of company.

August 24th.—Hoisted the dinghy on deck this morning to straighten the shaft, which was bent last night when the propeller struck a shoal spot near the wharf. Went around to the Bluffs to meet the Madam and the Chief Engineer, who arrived with half-a-dozen trunks for the Madam and one motor cycle for the Chief.

Spent the afternoon on Cedar Neck examining the freaks the lightning had played with the Skipper's cottage earlier in the season. Also inspected the new footbridge which replaced the one moved off by the phenomenal high tide of last Winter. Had company to dinner and the company went home early to unpack trunks.

August 25th.—Strong S.W. wind. Nothing doing. Drove to Edgartown in the afternoon.

August 26th.—Wind was still heavy this morning, and undoubtedly there was a good surf on South Beach, so we decided to go to Katama Bay, wind or no. Had Mr. and Mrs. George C. Foster as guests in addition to our regular crew.

The stretch from Oak Bluffs to Edgartown was rough, and there was wind a-plenty. Totem rolled and pitched as though old Father Neptune had been set to rock the cradle when he wished to go out with the boys, but after thirty minutes of this stomach-stirring exercise

the quiet waters of Edgartown harbor were reached and the company began to tell how they did not mind rough water at all. Here the puffs of wind were still savage but impotent.

After doing away with that aching void which comes to most of us three times a day, all hands were stowed in the dinghy, which immediately started for the beach. There was enough sea to cause the small boat to splash quite a bit, and finally water got into the wiring of the engine, which induced the Chief Engineer to utter words which the Skipper has refused to quote. The Quartermaster said that he made a few cursory remarks, but what they were is more than I can find out, so that all we can do is to guess, each in his own fashion, where the conversation led. After the Chief Engineer's language had become sufficiently heated to dry the affected parts, the engine was carefully covered with canvas lest the thing happen again.

The surf was all that could be desired of surf, but Jupiter got out his sieve about this time and the party made haste to get under cover of the cockpit awning. By 4:45 Totem was back at Vineyard Haven, passengers were landed and things snuggled up for the night. About this time the wind fell and by dark was light from the Northwest. Right here the Skipper remarked in that mild-mannered, hesitating way of his, that the engine ran like a clock. Let me explain that he did not mean a French clock, which never runs and seldom walks, but just an ordinary dollar alarm clock that goes just as a matter of course.

August 27th was a beautiful day, but all hands had shore leave and Totem idled.



In Vineyard Haven



At the Entrance of Newport Harbor

August 28th.—Filled the tanks with Tashmoo water this morning and then crossed to Captain Cromwell's dock for gasoline. It was time for the Quartermaster to don his store clothes and get back to his desk, and so Totem took him around to the Bluffs and sadly said good-bye. Passed Atala, bound to the eastward with a party on board. Wind Easterly and moderate all day.

August 29th.—During the night it showered, and during the morning the same "it" was cloudy, with a moderate Southeast wind. The Skipper had been figuring on to-day as the entering wedge of a cruise to Newport, but his plans ran off the track when Davy tendered his resignation. He said he was sick and, to do him justice, he looked the part, but to the Skipper who would to Newport go, it seemed like a poor time to be sick, and thus the Skipper was not quite sure but that it was a bluff. If it was, Davy had a surprise coming, for his proposition was taken up with a degree of promptness that was as



Surf on the Cliff Walk, Newport

sudden as the screech of an owl on a dark and lonely night.

No sooner was Davy's wish granted than the Skipper began to get busy, and he was lucky enough to fall in with Captain John Reynolds so soon that inside of half an hour the Captain was booked for the remainder of the season. And that is the last we will ever hear of Davy.

The Captain does not talk much about himself, but between what we were able to pry out of him and what the neighbors said, the following has been patched up: If he was not born in a dory he was certainly sailing one six months later, for he made his first voyage as captain when he was twenty years old. At that age he took out a whaling schooner for Sam Osborn, of Edgartown, and as he was getting away from the dock he overheard one of the old codgers who was looking on say to Osborn: "Well, you might as well leave her tied up to the dock as to let that boy take her." But "that boy" made a great success of the trip. Next time, however, he ran into a Southeast gale the very first night out and, as he put it, "she went out from under him." All he had time to save was his papers, but he was picked up by a freighter and carried into Baltimore.

The mishap was evidently regarded as a mere piece of bad luck, for so firmly was his reputation already estab-



Naval Training Station at Newport

lished that he was immediately given another command. It is said that Captain Reynolds was the youngest captain who ever sailed out of New Bedford. So sure was he of his hold on the job that when he said to Mr. Osborn, as he was starting on a voyage, that before the next voyage he expected to be married and wished to take his wife, and the ship-owner said, well, he did not know about that, they were not in the habit of allowing a captain's wife to go out with him, the Captain responded it was that, or no Reynolds, and when the time came he found very nice quarters fitted up for the bride. The Captain was successful, and in due course he was put in command of the best whaler that hailed from New Bedford. By and by he had enough to keep the wolf down at the foot of a rather deep garden, and gave up deep-sea fishing, built him a nice house on a slightly elevation in Vineyard Haven, and now he keeps himself busy with Mable D., the largest catboat in the harbor.

The Chief Engineer attached a hot-air intake to the carbureter this morning and, of course, Totem was for trying it that very day, and the Skipper, always ready to humor her every whim, said "certainly," and off they all went. It seems that a carbureter is like a voter, in that it is better if fed vast quantities of hot air. This relieves the cold sweat caused by the rapid evaporation



A Bit of the Cliff Walk

of gasoline and good resolutions, and tends to make the action rather more certain.

August 31st.—By ten o'clock Totem was outward bound for Newport. She was accompanied by a fair tide to beyond Penikese. About this time the wind began to breeze up from the Southwest, and soon developed into a fresh, wholesail breeze, which kicked up quite a little sea for Totem to buck into, and so it was all the way to Brentons Reef Lightship. The old lady rolled quite a bit at times, but kept jogging to the westward, and at four o'clock we were running into smooth water off Newport. It took just six hours to make that forty-eight and a half miles, but let us consider—first, we ran some distance out of the way to photograph the barkentine Kremlin of Boston. The Skipper likes to think that this added miles, and then this pounding into a head-sea is very fatiguing, so the Skipper felt reasonably satisfied with the result.

No sooner was the anchor down than the Chief and the Skipper chased ashore, ostensibly for ice-cream. It seems that the Chief once on a time went to school here and knows somewhat of the devious ways of the town, but beyond that meagre explanation I am not permitted to go. On returning they reported Thames Street as busy as ever, and that they had found that the Davis bakery produced as good bread and cake as of yore. Both statements appear somewhat irrelevant, and what they have to do with the chief end of the journey which, of course, you understand, was ice-cream, is more than I can fathom. However, we had a poor sunset which, no doubt, would furnish a good clue to the mystery if it were properly followed up, as by the time all hands turned in at four bells the sky was as clear as the Passenger's conscience. (The Passenger did not go on shore.)

September 1st.—We turned out this morning to find

it raining, and it looked as if we were in for a rainy day. The Skipper and the Chief Engineer got uneasy about eleven o'clock and went ashore, but they had to row, as the dinghy's engine refused to start with so much dampness around. This led to a discussion about jump-spark and make-and-break ignition, with the Chief strongly in favor of the latter for an out-of-doors engine in rainy weather. He could not change the ignition outfit very well, but he did take off the small Schebler carbureter and substitute a Lunkeneimer vaporizer which he found in a locker. This seemed to be an improvement, as the engine started and ran all right in the rain. About four o'clock the rain stopped and we went ashore for a walk. Strolled out Bellevue Avenue and admired the homes of the wealthy, and then strolled back again to have a good dinner and turn in at ten o'clock. Does not sound very exciting, but that is about the way it happened.

September 2d.—The Chief Engineer had a spell of language this morning when he found it was raining again, but after he had taken on a load of genuine Newport sausage and acquired a more equable frame of mind thereby, he thought the weather was preparing to spring a pleasant little surprise on us and, sure enough, it did about nine o'clock, when the sun got a strangle hold on the hosepipe. Such an invitation to come on shore as this was accepted by all hands.

Having learned by long years of experience that man cannot live on breakfast alone, any more than he can on bread, the expedition first headed for the market, where a two-days' supply of plum duff was laid in, after which the most expensive seats in a trolley car were engaged for a trip to Eastons Beach. Here we tried shanks' mare with considerable success over the famous cliff walk which skirts the edge of the cliffs. On one hand the sea foaming over the rocks below with a distant ship here and there to break the long, straight horizon line;



Vineyard Haven Wharf



West Rock, Sakonnet Point

on the other the so-called "cottages" which those endowed with much of this world's goods have scattered along this famous ocean-front.

All members of the party, some of whom have been miles away from home, agreed that this was the grandest thing of the sort in existence, and he who kept the log wished for that power of inspiration that would enable him to put it on paper for others to see as Dame Nature had showed it to us. This walking business is all very well theoretically, but it was never intended that sailors should undertake such prolonged exercise as these seven miles afforded, and we were more than pleased to be back again to Totem and lunch.

By two o'clock we were outward bound for Bristol, but the morning's experience had so imbued us with a love of ease that when we arrived no one was seized with a desire to go on shore, so the Skipper about ship and headed for Sakonnet River. At Tiverton we found a lifting draw on the trolley bridge which was new to all hands, and especially aroused the admiration of the Chief Engineer, who pronounced it a pretty slick piece of mechanism. The Skipper had exposed all the plates in his camera before this eventful discovery was made, and consequently was unable to take the customary photograph. Totem now headed down Sakonnet River for Fogland Point, where we nested for the night in one of the cosiest little harbors that ever you did see. The event of the evening was a meat and vegetable decoration of Mr. Inner Man, which appears to have been appreciated from the practical, rather than the esthetic side.



Sakonnet Point Lighthouse

September 3d.—The Skipper thinks that any one desiring to take the rest cure should locate in Fogland Point harbor. Nothing was ever quite so quiet as *this* place, not even a sleeping babe after a wakeful night. Totem lay like an apple in the grass, so snug and motionless was her setting. The change from the tossing to and fro which had been our lot for the length of two days in Newport harbor was a great and gratifying relief. Some five years ago the Skipper spent a night here, and then as now was he visited with a desire to try the shore route to the top of a nearby hill in order to view the unknown land beyond, but now as then he managed to restrain this great longing—this time because the present was so eminently propitious for the run across to the Vineyard.

At 8:30 we started down the Sakonnet River, passed close to Sakonnet Light and West Rock, and headed up for Hen and Chickens Lightship.



A "Goose-Winged" Royal

When within about two miles of Penikese Island the Skipper sighted a small boat bottom up. It looked like a good boat, and Totem decided to stop and go wrecking. As it was too rough for Totem to go alongside the derelict, Totem Junior was lowered from the davits and the Chief Engineer and Captain Reynolds started for the wreck. They found it was a dinghy belonging to the yacht *Annette*. The painter had parted, showing that she had probably broken away from the yacht while towing. Took her in tow to the smooth water back of Penikese and bailed her out. The Skipper could not reconcile the private signal painted on her bow with the data in Lloyd's Register, so he does not know who owns her. He has advertised her in the *New Bedford Standard*, as she was found off the mouth of Buzzards Bay.

Went around to Cuttyhunk and found a dredge at work at the breakwater entrance. The *New Bedford* boat was at the wharf inside, a crowd of people was com-



Old Boreas Gets a Trifle Familiar Sometimes

ing down to her, two light delivery wagons and one ox-team were taking freight away from the wharf, and it looked as if Cuttyhunk's isolation was a thing of the past.

Left here at 2:45 and picked up the mooring at Vineyard Haven at 5:30, making slow time owing to the two dinghys in tow.

September 5th.—The morning papers had arranged for unsettled weather this day, and for a wonder their arrangements were carried out to the minutest detail. Thus the day started with rain, and later this ran off into a plenty of fog. Of course the most important events in this part of the world at the present time are our plans

for our own amusement, and to be interfered with by mere weather is carrying the thing altogether too far. However, we did manage to squeeze in a little jaunt around to the Bluffs, having with us the Fosters and Mr. Phillips. The Skipper claims that this has been the warmest and stickiest day he has ever known on the Vineyard, and the Skipper has known the Vineyard for some forty odd years. The afternoon fog helped to lower the temperature somewhat, and when we had returned to our mooring the Madam brewed a delectable cup of tea wherein lemon and cloves and sugar helped mightily to disguise and subordinate the original flavor of the tea—a very worthy object it appears to me.

September 6th.—It was our intent to start for Hyannis to-day, but the weather looked nasty, and as five tugs lay at the steamboat wharf while their tows were anchored in the harbor, the Skipper concluded that if they did not see fit to venture forth it certainly would not be a wise move for him.

The variety furnished for the afternoon was fog. The Skipper cut a few holes in it that his weather eye might pierce the beyond, but he saw nothing which led him to venture forth.



Back of the Vineyard Haven Breakwater

September 7th.—During the night the bad weather left for parts unknown, the wind came to us out of the Northwest and, as it passed, gathered to itself all the moisture with which the air had been so heavily burdened, presumably taking it out to sea and dumping it.

We left Vineyard Haven at 9:30 and reached the Hyannis beacon at twelve o'clock noon.

The Skipper had put his money into one of Eldridge's harbor charts of Hyannis. This showed an entirely different channel from that which we used last year, but the Skipper, with his usual childlike faith in the works of man, followed whither the chart led. Certain local boats immediately took an interest in the proceedings and warned him that Totem was in the way which leads to destruction, so she worked out of the muss by following one of the said local boats in, while the Skipper offered a prayer for the soul of the deluded chart maker. The Skipper's prayers vary in length from two words to a dozen or more, and are both forceful and to the point—in fact, they might, in a way, be likened unto the formula which a certain gentleman used for grace before meat which, if I am correctly informed, was delivered after the meal was on the table, and which came, as one might say,



Cape Poge Lighthouse



A Foreground Study

hurriedly, thusly: "God'lmightywhatasupper." It is said to have answered every purpose.

A walk about town during the afternoon discovered no new thing, but sundown held a surprise in store for us in the shape of many mosquitoes, which called for the cursory attention of the entire crew until about midnight, when they retreated from the bloody field of battle, leaving us to heal our wounds as best we could.

September 8th.—The Skipper got an idea that he wanted to see Provincetown, but he did not want to see it enough to take Totem around there, so he took a train from Hyannis instead. The train ride through the sandy country was interesting where one would expect it to be monotonous. Orleans and Wellfleet and Truro also looked interesting, and as if they would be profitable to visit.

Provincetown itself was quite a busy place owing principally to the fishing smacks lying in the harbor and to a large refrigerating plant which freezes fish and holds them until the price has riz. The Summer visitor had nearly disappeared and the hotels held but few guests.

The new Pilgrim monument attracted us. It has been a year and a half in building and was erected to commemorate the first landing of the Pilgrims on Novem-



Falmouth Harbor

ber 11, 1620. It is 252 feet in height, and folks here-about claim that it ranks next to the Washington monument, which is the highest structure of solid masonry on the continent. Apparently it is agin scripture, for it looks to be builded on the sand, but standing as it does on a hill, and at one of the most exposed points on the coast, it gives no heed to the strongest gales, as tests made with the wind in excess of 84 miles an hour show no vibration.

A drive up and down the main street which skirts the water's edge revealed many narrow, interesting looking cross streets, and a few quaint doorways with leaded glass fanlights and side windows of the same pattern.

It had been cloudy on the way up to Provincetown, but on the return trip the sun shone and cheered things up quite a bit. Passed one cranberry bog where there must have been fifty pickers at work. Reached Hyannis about 4:15 and, after a call at the bakery and the newsstand we boarded Totem.

The wind had hauled to the Southeast during the day and we had no mosquitoes.

September 9th.—*She* was to arrive at the Vineyard to-day, so we had to get back on account of the Chief Engineer. The morning was dark with rain squalls and a brisk Southerly wind, and the barometer had fallen two-



Alongshore

tenths during the night, so both the Skipper and Captain Reynolds guessed there was a little mussy weather ahead. But *She* was to arrive, and so we started. Had a new pilot this time, and he took us out by the same channel we used last year. He said no one used the East channel indicated on the Eldridge chart, so we threw the chart overboard lest it should get some one else into trouble.

Found quite a sea outside the breakwater, and we jumped into it and rolled until we got near the Succunnesset Lightship, when the wind moderated and the sea smoothed down. The Captain tied up a bundle of late papers and tossed them aboard the lightship as we passed close to her. Made the harbor just at noon, having come across in three and a half hours, which was satisfactory considering the head-tide and head-sea. *She* didn't arrive after all.

September 10th.—Wind shifted to the North during the night and it turned cold.

Took the Chief Engineer over to Woods Hole, as *She* had wired she was coming on the noon boat, and after investigating the fruit market we went through the Hole and anchored in Hadleys Harbor. After lunch went ashore on Monohanset Island and walked South and out on one of the wooded points. The place was



An Old Hooker

just as attractive as ever, but we saw nothing new. Something ailed the dinghy's engine on the trip back to Totem, and as the Chief Engineer was off duty to-day the Skipper and the Captain had to turn to and locate the trouble.

On the way home passed a three-master with a queer rig. The Captain said she was an old laker with a goose-winged royal. All hands thought she'd better return to the lakes, as she is no ornament to the coastwise trade. Her name was Oliver Mitchell, and she hailed from Port Huron.

The ad. in the *Standard* about the dinghy we found off Penikese located the owner, who proved to be Dr. Runyon of Edgartown. She broke away from his sloop Annette in the Sound at the entrance to Quicks Hole, and as he was short-handed and the sea was rough, he had to let her go.

Annette was waiting for us when we got to our mooring, and took her dinghy home with her.

September 12th.—This was one of those rare clear days which sometimes comes with a dry Easterly wind.

Took Totem down to the entrance of Cape Poge Pond and anchored her there; then took Totem Junior into and across the pond to the lighthouse.

From the bluff here we could plainly see the Life-



A Schooner That Has Turned Into a Sand-Bar

Saving Station on Muskeget and the water tower on Nantucket; looking East we could see Cross Rip Lightship, and to the North the dwellings at Hyannis Port were visible. Met Captain Barrus, the lighthouse keeper, who said such days were rare, but that he could frequently see Nantucket early in the morning just before sunrise. Also made the acquaintance of one of the assistant keepers, aged three, who, with a hammer almost as large as himself, was driving nails into a block of wood. He was very talkative, and proudly exhibited a wheelbarrow which he trundled around. When asked his name, he replied: "Cape Poge Lighthouse, Massachusetts."

Saw thousands of young scallops on the seaweed near the shore and were told they would go off into the deeper water as soon as they were large enough to eat.

Stopped at Oak Bluffs on the way home and looked at some fine rugs, but we only looked.

Here we came on a Boston lawyer named Ladd who, for the past two months, has been coasting the Massachusetts-Rhode Island-Connecticut-New York shores in a 15-foot canoe. He reports having had a fine time, but the Skipper has about as much respect for a canoe as a cow has for beefsteak, and Mr. Ladd does not appear to have made a very satisfactory impression.

September 13th.—We crossed the Sound to inspect the new harbor at Falmouth, and found two jetties like those



Point Judith

at Oak Bluffs with plenty of water and a long pond beyond. It is a good harbor and can be made in any weather. As yet there are no lights on the jetties. Just inside the entrance are two docks. Landing at the East dock will take one to Falmouth Heights, while the West dock leads toward Falmouth village. We took the former and enjoyed one of the grandest views that these coasts afford. On a clear night Gay Head Light is easily visible in the West, while toward the East there is no limit but the horizon.

September 14-17th.—Strong North to Northeast winds with occasional showers. The Skipper did his best to dam the floods, but without noticeable effect.

September 18th.—The weather man sandwiched in a pleasant day and Totem took the Madam and Miss Hallett across to Hadleys Harbor that the visitor might view the beauties of this part of the Forbes estate.

September 19-20th.—More nasty weather composed of equal parts of Northeast wind and rain, most execrably damnable, for time was fleeting.

September 21st.—Cleared up this afternoon and we took gasoline and stores aboard for the trip back to New York. The weather during the past week has been the subject of both fruitful and frightful comment, and it is feared that there are a number of very long and par-



Lattimers Reef Lighthouse

ticularly black marks in the record book up aloft in consequence. When Gabriel trumps up the final charges some folks will require a lot of what is known in Washington as "government paint"—elsewhere whitewash.

All hands, which includes Messrs. John F. Washburn and George D. Hillman, as well as Captain Reynolds and the Skipper, came on board to-night to be ready for an early start, and that there should be no mistake, Captain Reynolds set Davy's alarm clock for 5 a. m.

September 22d.—The alarm went off this morning and the crew tumbled out and into its clothes, and when it was altogether too late some one bethought him to look at the clock and, lo! it was but 3:50 instead of five o'clock. To even think the things that were uttered would be a sin, and it is best to hurry over the intervening time to breakfast. As it looked like rough water out in the Sound time was taken to clear away the dishes and stow them in their racks before proceeding on our journey. Hence it was 5:30 when Totem poked her nose around the end of the breakwater. Outside a strong North wind was blowing the tops off the whitecaps, and after we squared away for Quicks Hole the sails were set and they helped amazingly, not only to push, but also to keep Totem steady in the seaway. A fair tide down the Sound also did its share toward shortening the distance, but after Quicks Hole the tide was dead set against us nearly



Ready to Throw the Papers on the Lightship

all the way to Sakonnet Point. Point Judith was passed at eleven o'clock—the wind held strong up to this time—after the Point was passed it fell to a dead calm and the sails were taken in. Fair tide to Watch Hill and head-tide to New London, which we reached at 3:30—ninety miles in nine hours.

September 23d.—That alarm clock went off this morning on time, Captain Reynolds having gotten onto its curves, but it was the weather that played the joke on us this time, for we turned out to find a heavy fog covering the just and unjust alike; hence the start was delayed until 8:30 and a good day's run was spoiled.

By the time we reached Bartlett's Reef Lightship the wind came in fresh from the Southward and the sails were set again. They helped all day long. Kept over toward the Long Island shore, passing close to Old Field



Kremlin of Boston

Point, and at 5:30 dropped anchor for the night in Oyster Bay, in sight of the home of Old Boreas.

September 24th.—The dinghy took us ashore and we looked around a bit, but it was such a dirty, windy little town that we soon came away disgusted, and about 10:30 Totem shook the suds of O. B. from her stern and, having a date with the fair (tide) at Hell Gate, she tended strictly to business until 1:30, after which they went down the East River hand in hand. Bayonne was reached about 3:30 and there we tied up for the night, as there are thirteen bridges across the Passaic River and the draws are slow to open in the afternoon when the commuters are homeward bound.

September 25th.—Totem went up the river this morning, crawled ashore and into her old nest, and shortly thereafter went to sleep for the Winter.

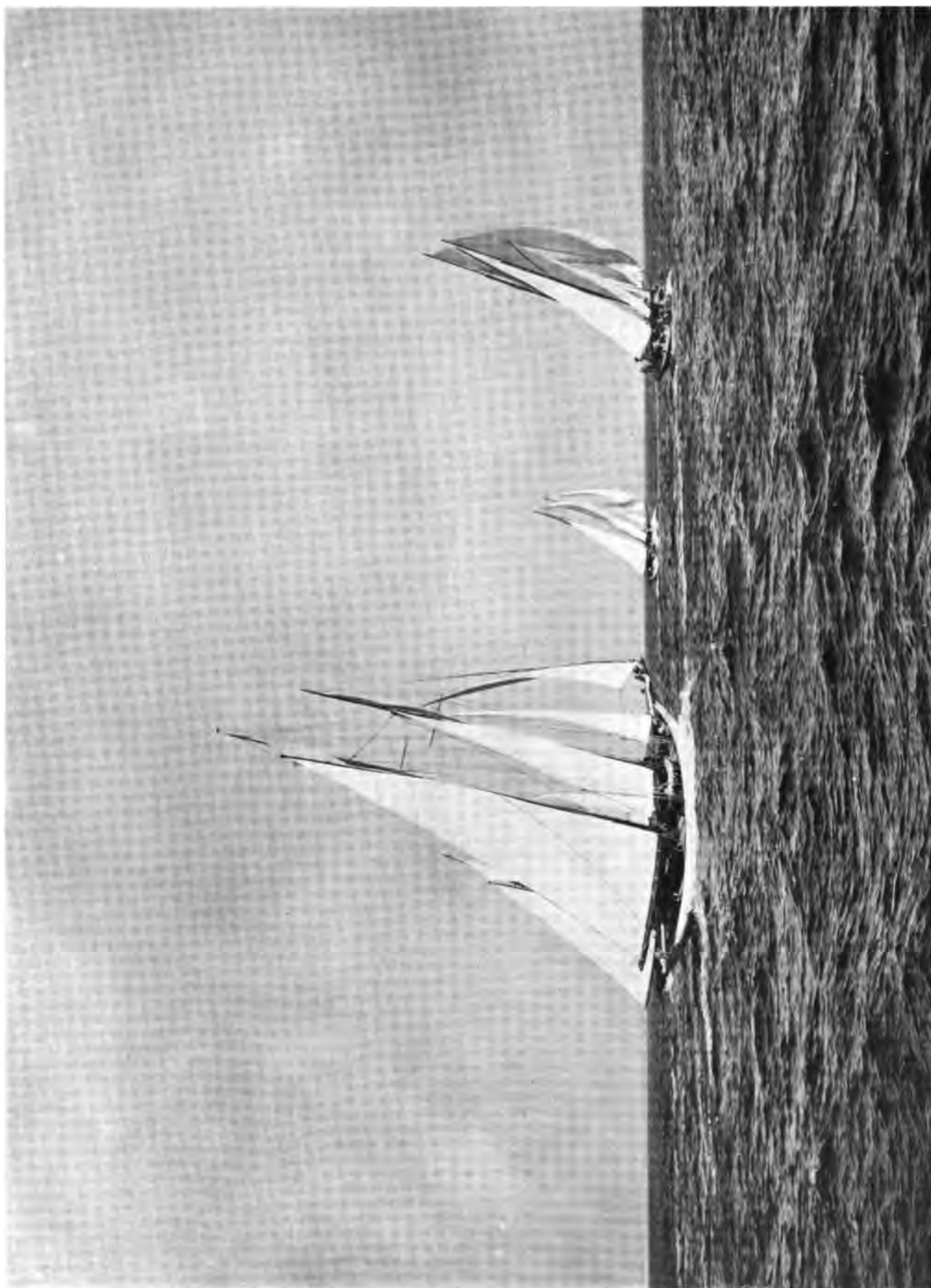


Photo by Lebeck

Start of the Schooners from Huntington Bay on the N Y Y. C Cruise of 1910

COASTING AND ENTERING HARBORS

Warren Sheppard



YEARS ago I was on Nellie Potter, a small schooner bound for New York. I was a little kid then, but I can remember when I turned in, soon after dark, we were somewhere between Barnegat and Sandy Hook. It was some hours later I found myself half-awake. I heard tramping on top of the cabin. My father giving orders and the cries of the sailors

told me the mainsail was being reefed. I dozed off again but was soon awakened by one of the loudest crashes I ever heard. Before realizing what it could be, there was a blinding flash of light and another deafening roar.

The old man was standing in the companionway looking out. I heard him say, "Seems to me I heard something just then."

Brower, the mate, answered, "I guess your hearing is all right, Captain."

A couple of chairs came tumbling across the cabin floor as the schooner heeled down under a strong gust of wind. Some more flashes and crashes and the rain came down in sheets. The slide was pulled over.

"How does the light bear now, Mate?"

"West Nor'west, sir."

"All right; we'll haul in some of the main-sheet. Come aft here!"

A sound of hurrying feet, then some more cries from the sailors.

"Belay that, let her go Nor'west half North!"

"Nor'west half North, sir."

The wind seemed to lighten somewhat after a while, but the downpour of rain continued.

"Have the men clear away the anchor and overhaul about 30 fathoms of chain!"

That order sounded like getting in somewhere.

Soon I heard the anchor pried off the bow, eased away by the chain lashing until it swung clear. Then the overhauling of chain. Twenty minutes passed. Light was reported bearing about S.W. by W.

"Main-sheet again, let her go West by North now!"

"West by North, sir. Nothing to windward of that. Nothing to windward of that, sir."

I heard the foam go hissing astern. She seemed to be moving right along. In 15 or 20 minutes I heard the light reported S.S.E. $\frac{1}{2}$ E.

"We'll let her go in now, Mr. Brower."

"Ready about, hard alee!"

Another minute and she was heeled down on the other tack. She was a quick-working schooner.

"How does she head now?"

"South, sir."

"That's good. She'll go clear with that."

Thunder was now rumbling in the far distance but the rain poured steadily; the kind the farmers need and comfortably go asleep listening to it.

I also pulled up my blanket and listened.

"I think we're far enough, let her come to! Stand by to let go the anchor; haul down the jib!"

I heard the jib start, then the men pulling on the downhaul. The sails fluttered, then all quieted down, the rain sounding stronger than before.

"You may let the anchor go."

"Let go—let go, sir," faintly from forward.

She gave that peculiar slight start as the anchor leaves the bow, followed by the rattling of chain and the usual paying out of the required number of fathoms. The dripping skipper came stamping down below soon followed by the mate, both pulling off oilskins and boots.

"Rain like h—ll," said the mate.

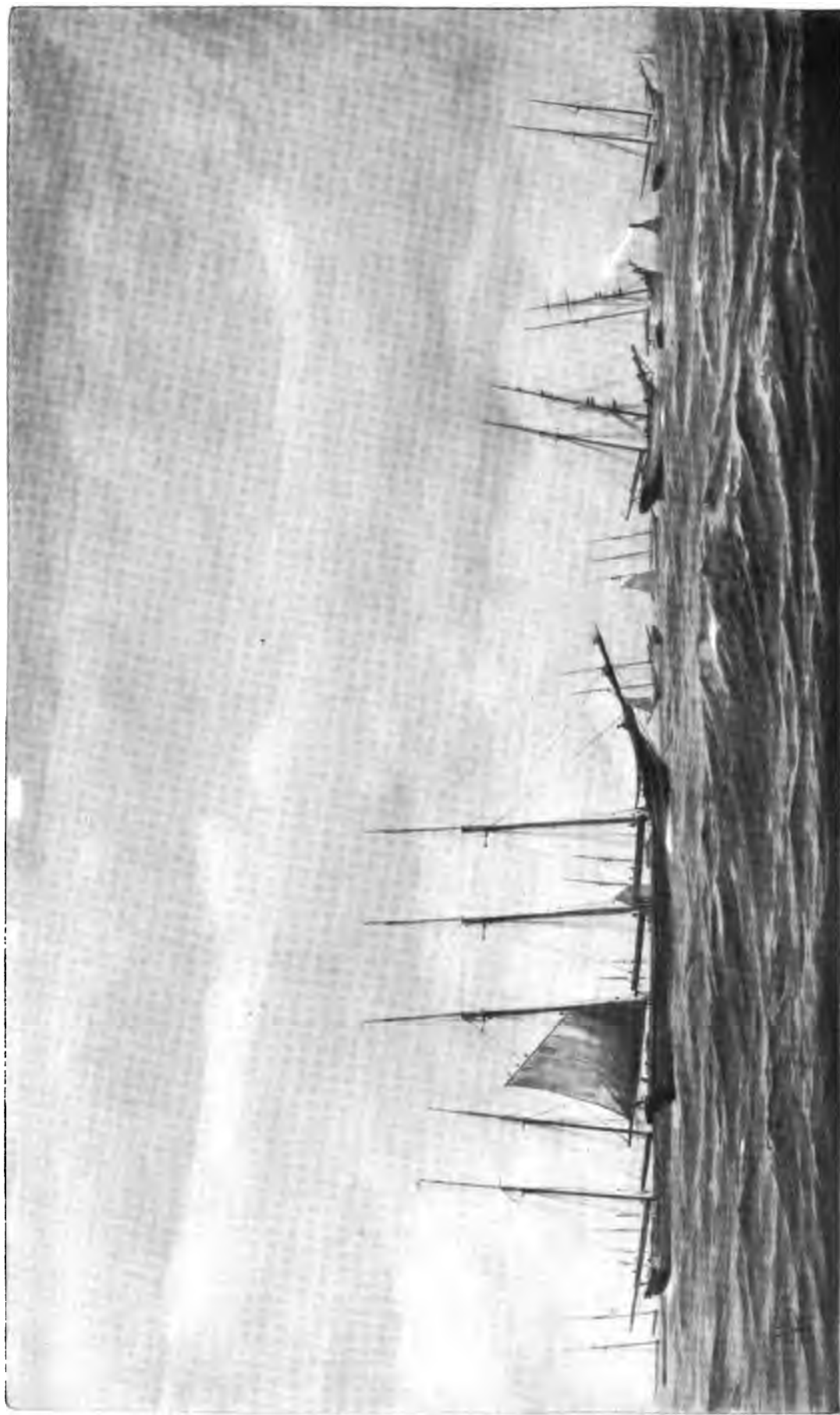
"I'll take your word for it," answered the Captain, as he poured something out of a bottle.

I followed the farmers' example and let the rain lull me to sleep.

After a Summer storm at night, things look bright and fresh in the morning. I can remember the fresh blue sky; the blue smoke coming out of the galley smoke-pipe; the smell of fried ham (our cook called it gam-mon) came aft with the breeze, and near by, the clink, clink of a windlass as some vessel started to up anchor. On two or three schooners they were hoisting away on sails, some were already underway. One went fussing along under our stern. I could have thrown a hardtack aboard. Nearly everything was on the move.

A morning in Sandy Hook thirty odd years ago had a very different appearance from what we now see. You see probably three or four coasters wind-bound, waiting for a slant and possibly two or three little fishermen. That's big;—but in the old days, say during an Easterly gale, you could count them by dozens. All kinds, ships, brigs, schooners, etc.

On the golden September morning I speak of there were probably thirty or more. The sun shining on the sails, gilded figureheads, paint and polished spars; the sky and the moving sparkling water made a crisp marine picture. All that picturesqueness and color is pretty nearly gone. Ugly old fabrics of iron and smoke are seen and they pass on out. At times you may see a pilot-boat or occasionally a yacht. I am glad to have seen the old pictures, time after time, for years. It is pleasant to look back upon. In fifty years more I doubt if any sailor would find anything in there worth a second glance. As I said I was a young boy then, but I can remember how much I was impressed by the ease and sureness with which the schooner was brought into the Hook on a dark, stormy night. I was not long in find-



An Easterly Gale, Thirty-Five Years Ago

ing out how it was done. I want to say something to you about that, and a few other things you may want to know.

With ordinary draught it is quite easy to safely enter most of our large harbors. They seem to be buoyed and lighted to perfection. As a general thing you know what harbors you expect to enter. You should have, however, the "latest" charts of all harbors, not only those you intend to enter but those you may be forced to make for through stress of weather. When cruising, always keep a record on the chart of your latest known position. Should the weather become thick, it will become very valuable to know; for example, at 8 a. m., Toms River Station was three miles W.S.W. and that the log shows that since then you have sailed twenty-five miles on your course of N.N.E. Your lead will give you, say, twelve fathoms. You are no doubt off Red Bank. If you haul up to North now, you will probably pass close to the Scotland and either see her or hear her bell. If it is very thick and you are not an old hand, that five miles will be very long drawn out; you will think you have missed her long before you get there. You will probably soon hear or see the lightship, after your heart has jumped into your mouth two or three times through being narrowly missed by one of the Southern steamers or one of those infernal tows of barges. You can trace your progress along with your lead, which should always be handy along the coast and always used when nearing your harbor in thick weather. Soundings will vary somewhat, according to the state of the tide. Take this into account, particularly in localities where there is a large rise and fall. Soundings are for mean low water.

If you make your lightship all right, you can lay the course from there N.W. $\frac{1}{2}$ N. magnetic, which will take you past the Hook. A careful navigator would no doubt go in behind the Hook and anchor until the weather cleared. There will be no trouble in hearing the siren on passing Sandy Hook in a fog. Take my word. It has some how to it.

Before thinking of entering any harbor study every light outside and inside. I tint every shoal anywhere near the draught of my boat with blue water-color. Draw bearings in fine red ink lines. Have them always ready before they are needed. When approaching at night, be on the lookout for lights. Send a man aloft when you think it is time. If the light is seen from aloft and not from the deck, it will no doubt be from the lighthouse. A vessel's light would look the same in

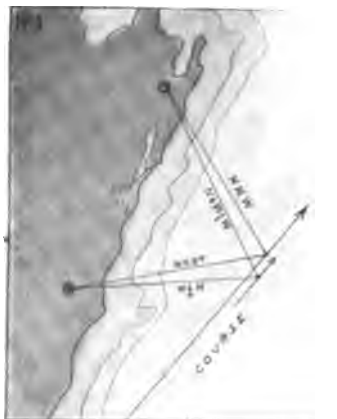


Chart No. 1



Chart No. 2

either case. It is sometimes difficult to tell the character of a light from a long distance. A fixed light will often seem to flash on the horizon, as the yacht rises on the waves from out of the hollows. When you get close on and get the exact character of the lights, say one fixed red and one fixed white, get an accurate bearing of each and plot on the chart; where the lines intersect is the exact position of the yacht. If there is deviation for the ship's course you must allow for it.

It is important to remember that compass deviation is *always for the ship's head*; for instance, if your yacht is sailing Northeast and there is a half point of Westerly deviation on N.E. and you take two bearings, if one should be N.N.W. and the other West, correct those two bearings with the $\frac{1}{2}$ point Westerly deviation for N.E. and plot them $\frac{1}{2}$ point to the Eastward to correct. They will then stand N. by W. $\frac{1}{2}$ W. and W. $\frac{1}{2}$ N. respectively. (Cut No. 1 shows ship's place before and after applying deviation.) When you take a bearing be as accurate as possible. It is best to haul to, if taking cross bearings as the yacht may change her place enough to alter the angle before you can take the second one. In working your way around reefs, too much care cannot be taken. I have often spoken about preparing your charts before going to sea with red-ink cross bearings. They show so plainly and keep clean. In working around the dangerous reefs of Bermuda at night I was extremely glad to have them so prepared.

Coral reefs are extremely dangerous to navigate through if you don't know them. If by chance you have no choice and must do so, get the sun behind you and direct the helmsman from aloft. The coral reefs can be seen through the white water very distinctly as dark patches. You can always tell the nearness of coral reefs by the change in the color of the water; it gets to be a beautiful light sapphire blue and then alters into what is called white water. The white sand is so distinctly visible that the water is very pale in color. In dark weather or much wind, on the surface, navigating coral reefs would be most uncertain,—your lead would not help you.

In "Dead Reckoning" in THE RUDDER of December, 1908, I mentioned my own way of using a small boat compass for taking bearings. Of course it must be kept away from davits and other iron. If you have the wind so that you can conveniently do so, a fine way is to have the helmsman alter the course until the light bears directly ahead. You cannot mistake a bearing of that kind. You will often find it desirable to know your dis-

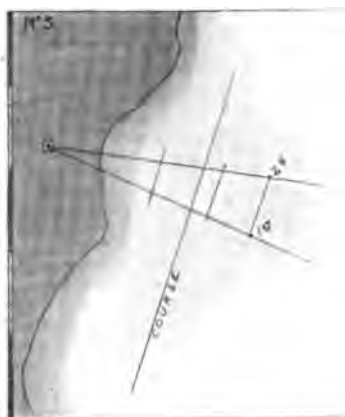


Chart No. 3

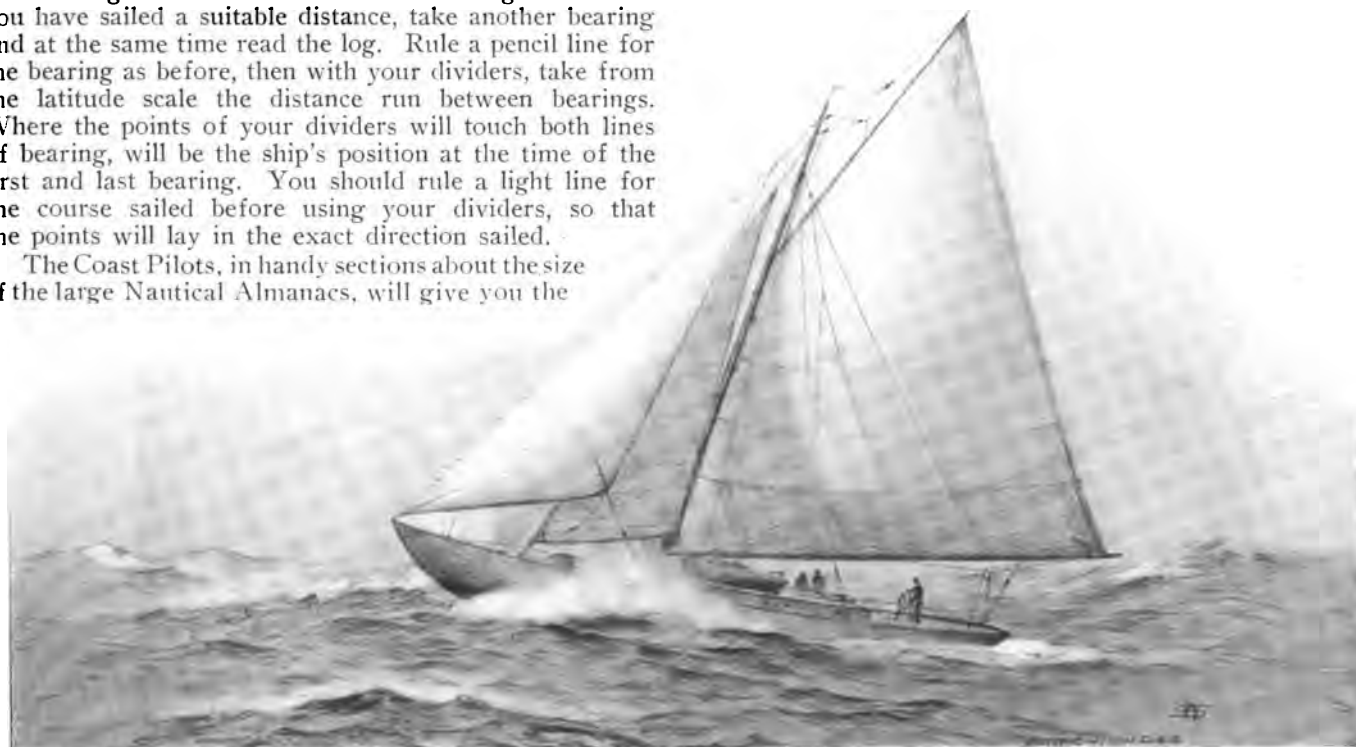
tance from shore at a time when there is only one light visible. In that case you can find your position by two bearings of one light.

The simplest way is perhaps shown in diagram No. 2. You take a bearing when the light is off the bow—4 points, and at the same time read the log; when your bearing changes 4 points or 45° it is then abeam; read your log again. You have made a right-angle-triangle, any side of which is equal to the distance run. This is called the bow and beam bearing. In diagram No. 3 will be found another method to use when you don't care to sail the distance of the side of a R.A.T. If well offshore that would take some time and perhaps the course you are sailing won't permit. Take your bearing and note your log reading. Then with your parallel rule take from the chart compass that bearing and rule a neat pencil line from the light seaward. Watch the course steered very carefully, judge the leeway and if there is current, allow for it as nearly as you can, in order to figure out the exact course made good. After you have sailed a suitable distance, take another bearing and at the same time read the log. Rule a pencil line for the bearing as before, then with your dividers, take from the latitude scale the distance run between bearings. Where the points of your dividers will touch both lines of bearing, will be the ship's position at the time of the first and last bearing. You should rule a light line for the course sailed before using your dividers, so that the points will lay in the exact direction sailed.

The Coast Pilots, in handy sections about the size of the large Nautical Almanacs, will give you the

most valuable information in regard to the tidal peculiarities of the different bays. You should get a full set; also the buoy book should be on board. The charts on a large scale have the set of the tides marked out with feathered arrows, showing how the current sets in each part of the bay at different stages of the tide. Flood tide is indicated by an arrow feathered on one side only; ebb tide by an unfeathered arrow. They should be carefully considered. It may save you from being set ashore. Go over them with a large reading glass and mark anything of importance so that you won't forget it. Near the white margin of the chart will always be found notes of the utmost importance to you when entering a bay or harbor. The character of the lights, intervals between flashes, range of visibility, and a note as to whether the soundings are in feet or in fathoms. Notice that particularly; also buy the charts that are stamped as being corrected up to a very recent date. On small yachts with scanty room, the chart is generally pinned on a board—perhaps a part you should take a look at is folded under. Don't chance anything—remove the pins and look it over. Every one should be so well acquainted with the different kinds of buoys that he can recognize them in an instant and act quickly. A green buoy of any kind marks a wreck. You want to keep clear of that. One with red and black horizontal stripes shows an obstruction in the channel. You want to keep away from that also. If you see one with black and white perpendicular stripes, go close, as it is in mid-channel, and no doubt it is a narrow one. There is always a good reason for it being there—keep a good lookout at night that you don't run into one. You wouldn't like it.

On the frontispiece will be found pictured about all the buoys, etc., in general use in United States waters. It will be noticed that in entering from sea all red buoys with even numbers must be left on the right or starboard



Marchioness in the Gulf Stream

hand, black buoys with odd numbers on the left or port hand. This applies to all buoys, Spar, Nun, Can or Whistles. A whistling buoy is not only placed near a shoal but will generally be found to be an outlying buoy, for use as a point of departure or guide into a fairway. There are three or four whistles off Long Island beach between Fire Island and New York Bay. They not only warn vessels of the near beach but can be picked one after the other; when bound in, a most valuable guide. They are all red and have even numbers. When you see the number that fixes your position.

Bell buoys are a warning of immediate danger. Although sometimes guides, they more often mark a rock or the nearness of a dangerous shoal. On the New Jersey coast, for instance, Shrewsbury Rock and Brigantine Shoals. It takes a smaller movement of the sea to sound the bell than it does the whistle. Can't you remember when every one on board, including the cook, have listened for a whistle or bell? What a feeling of relief to hear the old whistle let out a dismal banshee groan through the thick fog. You are ready to take that cup of coffee right away. There is a bell off the entrance of Block Island Pond, both a guide and a warning. If you steer correctly from that bell, you can go into the very narrow entrance in very thick weather, as it is right off the opening,—of course your compass must be right.

Buoys with a perch or cage or ball on top are placed at the turns in channels. Checkered buoys are not seen in United States waters. Bermuda is the nearest place to find them. Gas buoys are often placed at the sides of channels in important harbors.

In the color plate the buoys are somewhat bunched through necessity of showing all kinds at once. An effort has been made to show each one in a way to fix its use in the memory. All red buoys will be found on the right, or starboard. The distant lighthouse and beacon and spindle on a rock that is submerged at high water to be used for ranges, show that you are looking

in. The black buoys are on the left, or port. In the center a black and white perpendicular striped buoy shows the channel to be narrow; farther on a danger buoy with red and black horizontal stripes. It is understood that spar buoys, marked in the same way, are often used.

When you have found your lightship, whistle or other buoy, you can sometimes lay a course right into your harbor. In other cases you must run a course until you get a certain bearing of the light. Then run until it has another bearing and so on around, until you can get to your anchorage. Some require the use of several range lights and the careful study of red sectors. The inexperienced should not risk a valuable boat in needlessly entering a difficult harbor. The best of navigators give them careful study before entering. Never be too reckless on approaching a danger—the careful man tries to see each mark as he passes it. He can then know where he is to a certainty. You cannot be too careful of some of your beaches. There are some bad places on the New Jersey coast that it is well to keep away from. We hear of a steamer being fast there every little while. Cape Cod is also a very bad place, as well as many others if approached carelessly.

At the time of the race to Bermuda in 1908, I was taking Marchioness along that beach bound to Marblehead. As we got pretty well up to the Highland Light, just before dark, it began to blow fresh with a cold, penetrating mist. A short, nasty sea. The fog shut down on the land but left the beach visible several feet up the hills. We were close to the beach, and going very fast. As the cold fog went right through, I began to envy the cook over his coal fire. We passed the Marconi Tower about a mile offshore an hour before and was running along the beach N. by W. $\frac{1}{4}$ W. I wanted to see the lighthouse. We were due to be right there. We were so close in I had just about decided to haul up a $\frac{1}{2}$ point, when as if by magic, the fog lifted from over the land and showed the lighthouse. It shut down again immediately thick as mud, but I knew we were clear of



Marchioness Off Cape Cod

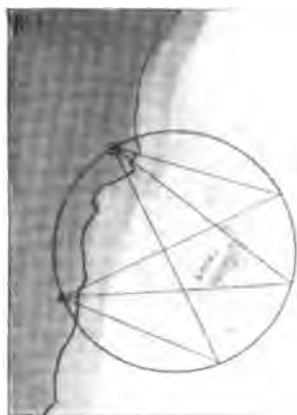


Chart No. 4

the Point, so let her go N.W. $\frac{1}{2}$ W. for the whistle off Peaked Hill Bar—a spot with a fearful record for wrecks before the whistle was placed on its eastward edge. As we neared Race Point, it cleared up considerably and we went around to Provincetown without any further trouble and anchored for the night—every man chilled through. It seems that it can be cold even in June. No one should continue to run a beach closely if it becomes totally obscured with fog. You are not sure how far you will get to leeward. Even with an offshore breeze it is best to keep a little off. Always have a margin for safety and don't forget that lead. I think you should enter a harbor with a small craft the same as if she drew several feet of water. Run the channels and pass the buoys properly, use ranges and learn each harbor well. You may have a larger vessel later on. I know several owners of big yachts who began on small

ones. They don't need the assistance of any professional pilot to go anywhere or to find and enter any ordinary harbor. When coming to anchor in a harbor that has a great fall of tide, remember to anchor where you will have plenty of water at low tide. There are some localities that a stranger should be careful of.

The danger angle can be used properly only when you can locate two points of land, towers or lights or other marks. If the land is strange, keep well off; that's the proper thing to do. You are not sure of the marks to measure on your sextant or of the hidden rocks. However, if you are approaching any known spot with an outlying rock or shoal that you want to pass safely, proceed as follows: Take your compasses and draw a circle on your chart that will pass through the two known objects on shore—a church spire and lighthouse or anything marked on the chart and also include well inside of it the rock or other danger—draw a line from the outer edge of the circle to each one of the objects, then measure the angles in degrees from the compass Rose on the chart. Place this angle on your sextant and see from frequent observations that it does not become greater. If it becomes smaller, you are getting farther away from the danger. In foggy weather, keep the lead handy and use it often, and compare with your chart until you find they agree. Listen carefully for any signals—the siren of a lighthouse or lightship, bell buoy or whistle. It is difficult to tell the distance of a siren or its direction. If your boat is a large one you can often see over a fog by going aloft thirty feet or more. Captain Lecky says, "When approaching a fog signal from to leeward, you will hear it sooner from near the surface of the water. When coming down on it from to windward, you will hear it best from aloft."



Photo by Stebbins

Ship Hotspur

SAILING ON TROPICAL SEAS

Harry H. Dunn

PART IV

Salina Cruz and Mexico's Isthmus

THERE is an old tale, more told than twice that he who once lives and loves in the tropics is never satisfied to leave them. Scattered up and down both coasts of tropical Mexico are old men who have lived their days in the silence of the jungle, or along the thundering surf of the shoreline—and no lure of modern civilization could drive them to quit this land of swamp and mystery.

Most of these men are educated, all are filled with that learning which cannot be bought in schools, but which comes to the wanderer far blown by wanton winds of chance to distant shores. If this be true, and it is, then there is more than a passing attraction in seeing the palm-fringed coast which has drawn so many men to its heart and kept them well. More than this, it is of interest to visit any new land, where the forces of development are battling with the wild and with the natural opposition of the natives to all the innovations brought by pale-faced strangers from more northern and less sympathetic climes.

This fact struck home to me in the Philippines; I saw evidences of the struggle in Japan; interior India is feeling the force of occidental civilization, and now the

same power for improvement is well on its way through Mexico, from the capital city 7,400 feet up in the air on the central plateau to sea-level at Tapachula on the west and far Progreso on the eastern shore. In all Mexico there is not a more interesting, more productive country than the narrow Isthmus of Tehuantepec, where sea and sea are now linked by a thin thread of steel running from Salina Cruz on the Gulf of Tehuantepec to Coatzacoalcos on the Gulf of Campeche.

The man, be he sailor of many seas or traveler by rail, who fails to see the heart of the tropics on this mystery-laden isthmus, omits more than half of his trip. He misses that which life may never give him the chance to see again, and, with all these things in view, when I rose one rose-gold dawn in Acapulco, gazed out over the swelling crescent of sea to the West, and heard the musical call of the boatmen on the bay, I determined to go on South, to see Salina Cruz, and, traveling thence further toward the equator, if possible, touch the Guatemala line.

The harbor of Acapulco was discovered by Hernan Cortez in 1531, and from this dreamy port he sailed later on his voyage of discovery up the West Coast as far as



Salina Cruz, the Small Town but Great Port of Mexico's Isthmus



Lake Tezcoco, One of the Pools Which Once Helped Form the Great Aztec of the Valley of Anahuac



The City of Tehuantepec on the Isthmus of the Same Name. This City is the Last Stronghold of the Tehuana Indians

Sinaloa. That Cortez ever got into the Gulf of California there is no record, yet had he never done anything but discover Acapulco, his fame would be secure among the explorers of the world. On May 9, 1540, Hernando de Alarcon sailed from Acapulco on that memorable voyage which resulted in the discovery of California, that land over whose composite name so many students of languages have wrangled for years.

When the commerce of Spain, borne across the Isthmus of Tehuantepec on the backs of men and mules, found its way from Coatzacoalcos to Acapulco, it was shipped on lordly galleons to the Philippines and to other ports of the Far East, while these same ships brought to this West Coast harbor a wealth of precious goods from China, Japan and the Indies.

Surrounded by high mountains, with only a narrow, tortuous, but deep passage to the outer sea, the harbor here is completely land-locked and is picturesque to a degree not found in the bays of colder climes. Acapulco is commonly considered the second best natural harbor in the world, and rightly so. Through the western rim of hills a second entrance has been cut, to admit the sea breezes to the city, called "El Abra de San Nicolas." The student of Spanish will wonder at this name, for it should be El Abierta de San Nicolas, but it stands in the type as Abra, so there you are. The bay is completely walled in by the hills, and is as secure in times of the greatest stress and storm on the open sea outside as is the millpond in the pasture lot back home.

The history of this ancient port is most interesting. It was early made a walled city or fortified town, owing to the advantage of its safe, deep-water harbor, and was garrisoned by the Spanish shortly after their discovery of the country. It remained in the possession of the Spanish crown until the end of the war for Independence, with the exception of a short period when it was captured by the patriot Morelos and his ill-armed but brave army. The



Summer Cottages on One of Mexico's Lakes

capture, which is among the memorable fighting annals of Mexico, was effected by a branch of Morelos' army under the immediate command of an American, furthermore, a Tennessean, Colonel Ellis P. Bean, who for a long time was held prisoner in the fortress of Acapulco, but, escaping, joined Morelos and took a sinister revenge on the city in whose dungeons he had spent three years.

The wall of hills shuts out even the ground swell of the Pacific; the rainfall is less than on the Gulf of Mexico coast, and, between the fringe of tall palms which glorifies the shoreline, the green hills come down abruptly into the water, white ranch-houses peeping from beneath their regular collonades. There is no beach, outside the harbor; inside there is never rough water; the 6,000 inhabitants are content to let life slip away just as it is, a lovely dream, with no needful thought of the morrow, no regret of yesterday.

On a narrow strand at the upper end of the harbor,



Lake Patzcuaro and Its Indian Canoes. This is One of the Most Beautiful Bodies of Water in Mexico



A Summer Resort on an 8,000-Acre Hacienda, Which Comes Down to the Shore of Lake Chapala

where sea and hills and eastern sky meet in a rainbow blend of life and color, lie the white buildings of the town, ended at the left by a cone-shaped hill, at the right by a fort which was an Indian watch-tower when Cortez came. Acapulco is a jewel, a pearl set in a matrix of emerald and turquoise and sapphire, with amber shades thrown down by tropical heavens, and, should not my written word lure you to it, come to see just out of curiosity—and you will linger out of love.

It is 350 miles by the shortest way in which you can sail, from Acapulco to Salina Cruz, and if you visit all the lagoons, all the little bayous, and see one-third of the villages a few miles inland, you will cover twice this many miles without realizing it. In these lagoons you will rouse the alligator from his noonday dreams on the banks, you will startle thousands of rose-colored ibises from their haunts, you will send screaming flocks of brilliant-hued parrots from the overhanging trees, and, if you are quiet in the little boat, you may come upon a lithe jaguar, stretched on his back on the sand at mid-day, or, as the shades of evening fall, stalking a tender young cayman on the rim of the bayou.

The Sierra Madre del Sur here comes down close to the sea, as it does along most of the West Coast South of Mazatlan, and the view from the sea is beautiful, if one keep close enough in shore to get all the benefit of the gray peaks rising into cloudland from a gently sloping beach. Thirty miles or thereabouts below Acapulco is Nexpa, a small village four or five miles inland on the river of the same name. Between the shore and the town is a small lake, formed by a shallow depression in the bed of the river. This stream is one of the most constant in this part of Mexico, and while the bar cannot be crossed, even in a rowboat, one could get a great deal of sport out of a small row or power boat on the river and the tiny lake. The town amounts to nothing other than being the home of some of the land-owners in this part of Guerrero.

There is an interesting lagoon near Nexpa, cut off from the sea by a low sandspit, and on the mainland side of this lagoon there is a prehistoric ruin, an unusual find in this country, for most of the old city builders chose locations for the towns well back from the sea. It has sometimes appeared to me that these early builders, whoever they were, had some powerful maritime foe to fear, and the only way in which they could hope to escape these invaders from the sea, was to build their cities so far inland that the ancient vikings of the Pacific could not find them. Most of the races which peopled Mexico were of Oriental origin, probably Chinese, and it may well be that the later races of eastern Asia, becoming more skilled in sailing, made raids across the Pacific. However, these were ancient yachtsmen, and we of the twentieth century are more interested in Mexico as it is than as it was.

Standing a bit out to sea to avoid a bar which extends south and west from the lower side of the shallow entrance to this lagoon, the cruising yacht crosses the Guerrero-Oaxaca line 100 miles further South, just a mile or two North of the inland end of a nameless lagoon or estuary, the mouth of which is half closed by another low sandspit. The cruise to this lagoon is



On the "Divide" in the Isthmus of Tehuantepec Midway Between the Two Oceans

straight sailing, skirting an uninhabited shore, on which are a few hills, but which is mostly barren and totally devoid of interest. There are said to be "bad" Indians in this part of Guerrero, and the southern end of the state is known to be the haunt of the last of the famous Mexican banditti, which General Diaz has been trying earnestly to wipe out for the greater part of his administration.

Falling into the hands of these thugs is no light matter, but, fortunately, they are exclusively pirates of the land, and, though Acapulco and Salina Cruz once were strongholds of real, deep-sea pirates, these monsters of the main are now gone forever. The village of Jamiltepec is five or six miles back from this lagoon, in a long deep canyon, down which the Rio Verde flows to the sea, emptying into another nameless lagoon a few miles South of the larger estuary mentioned above.

The Rio Verde drains a vast territory, its South fork reaching up to Oaxaca, the capital of the state of the same name, and its North branch dividing again to flow around the mountain village of Yatanduchi, a strangely Japanese name for this ancient hamlet. Below the mouth of this "green river," as its name implies, is another small lagoon, which one cannot enter from the sea even in a rowboat, and then, ten miles further South, the Bahia Escondido, near the northern shore of which is situated the village of Tutepec, an inconsiderable town with no attraction for the average traveler.

Then there is a bay with a comparatively open channel, but no depth inside at Punta Angeles, though the place is anything but a fit habitation for angels, whatever it may have been when named. Out of this bayou the cruiser rounds the shoulder of Mexico and heads North and East again into the great Gulf of Tehuantepec, a

storm-ridden piece of water in some seasons of the year, but ordinarily a beautiful cruising ground. Strong Northers beat across the Isthmus of Tehuantepec, driving the surf in the Gulf back into the teeth of the sea making extremely rough cruising inshore, and it is best for the yachtsman to take a straight course, some twenty miles from land to the man-made port of Salina Cruz, where he will find abundant shelter and deep water for the roughest kind of weather outside.

There are two small islands just at the northern entrance to the Gulf of Tehuantepec, but they are not worth visiting, though there is some sort of a building on one of them. No towns are to be found along the coast, which is, for the most part, low and swampy, while one can see a fair sample of all the western half of the isthmus at Salina Cruz without taking the trouble or risking the danger of landing on such an inhospitable shore.

Inasmuch as the greatest feature of a visit to Salina Cruz is to get an idea of the famous isthmus without actually crossing it, a few notes gathered by the author in several visits may not be uninteresting:

The Isthmus of Tehuantepec is situated in the southern portion of Mexico, taking in portions of the states of Vera Cruz on the East Coast and Oaxaca on the West. It lies between 16 and 18°, North latitude, and 94 and 95° longitude, West of Greenwich. From ocean to ocean in an airline, it is 125 miles wide. It is comparatively level in character and the rise from the Atlantic or Gulf of Mexico side, is gradual, culminating in the Chivela Pass at a height of only 730 feet. The descent to the Pacific from this altitude, however, is very abrupt, and required great engineering skill in the construction of the Tehuantepec Railway, the shortest transcontinental line in the New World. The sudden depression in the height



An Indian Fishing Camp on One of the Lakes in the Interior of Mexico



The Yacht Condor on Lake Chapala

of the Sierra Madre range from more than 5,000 feet in Chiapas and Oaxaca to only 730 feet in the narrow neck of land is one of the wonders of nature in Mexico's tropics, and seemed as if especially designed by Nature to cooperate with man in linking the two oceans.

The latitude and inconsiderable elevation of this isthmus at once argues an extremely hot and unhealthy climate, but such is not the case, and the yachtsman who spends some time at Salina Cruz, further inland at Tehuantepec, or over on the East Coast at Coatzacoalcas (now called Puerto Mexico) will experience no evil effects from temperature moisture or other evil influences usually met with in the tropics.

The products of the isthmus are numerous and varied, its undeveloped resources not less so. The soil and climate are adapted to the growth of corn, coffee, cacao, tobacco, rice and sugar cane. The jungle is alive with game and the streams and ocean abound with fish of all kinds. Scattered through the heavy timber are large tracts of open country on which graze vast herds of cattle, while the forests yield a large amount of useful timber as well as precious woods and dye-stuffs. Many gums, resins and balsams are taken from these same forests, and the commerce of the two ports is large and valuable in the products of this one narrow strip of land alone.

Cochineal is principally produced on this isthmus, while medicinal plants and spices, oranges, other tropical fruits, indigo, cotton, and other fibers are shipped from Salina Cruz and Puerto Mexico in quantities. Oil has been found in paying quantities; alabaster and gypsum occur in valuable deposits and there are immense salt beds in some of the lagoons. Much of this country is undeveloped, and travelers who pass through this region or

follow its shores, should keep their eyes open for opportunities, especially since this is more of a white man's climate than is any other part of the tropics of the western half of the world.

The port of Salina Cruz, which was an open roadstead, from which ships fled in terror to the open sea for safety when the great winds blew, up to 1907, is now as safe a port as San Francisco or New York. Man has made it so, and the harbor is worthy of consideration by every sailor who enters it; the marvels of its engineering are nothing less than wonderful, and many a mariner in these seas owes his life and his ship to the fact that he has been able to scud before the wind until safe within its protecting walls.

Since there was no natural shelter, it was necessary to construct both an outer or refuge harbor, and an inner harbor with wharves and drydock. To accomplish this enormous breakwaters were built out into the open sea, ending in a depth of 70 feet, with the convex side turned seaward, thus forming the outer harbor. The entrance to this artificial bay of refuge is 656 feet in width, and, as has been said, 70 feet in depth. The East breakwater is five-eighths of a mile in length, extends 1,200 feet out to sea in a straight line, then curves 825 feet and continues 1,235 feet further in a straight line. The West breakwater is 1,900 feet in length, running straight out from the shore 850 feet, curving 370 feet and finally ending in 680 feet of straight masonry.

A line of wharfage, through which there is a deep, wide passageway, separates the outer from the inner harbors, the latter of which is 3,280 by 925 feet in surface dimensions, with a depth of water of 33 feet, alongside the wharves, which line the entire inner pool. The entrance from the outer to the inner harbor is 100 feet wide and is spanned by two swinging steel bridges of the bascule type. Here is also located the largest drydock on the Pacific Coast of North or South America and one of the finest in the world. It is 610 by 89 feet, and, at low water, the depth over the sill is 29 feet.

At Salina Cruz there was nothing but a small Indian village when the government and the railroad took up the work of improvement a few years ago. Now, however, this site is occupied entirely by workshops, warehouses, etc., and a new city has been laid out on higher



Preparing One of Mexico's Great Harbors for the Commerce That is Coming Dropping a 15-Ton Rock Into the Bay

ground. It has wide streets and has been planned with all modern sanitary conveniences. The traveler by water will find a few days' or even weeks' stay here most pleasant.

One place which every visitor to Salina Cruz should see is the village, now growing into a city, of Tehuantepec, where dwell those strange Indians, the Tehuanas. Tehuantepec is the largest and most important town on the isthmus, and the word signifies, in the Aztec tongue, "Mountain of the Man-Eaters." It was given to this locality ages ago by the early dwellers in Mexico owing to the fact that the hills in the rear of the town were then thickly infested with man-eating jaguars or tigers.

Tehuantepec is about twelve and one-half miles inland from Salina Cruz, along the Tehuantepec railway, and the population consists mainly of Indians, of the Zapotecan tribe, descendants of the Aztecs whom Cortez found here nearly four hundred years ago. They still speak the Nahuatl dialect of the Aztecs, and retain to a large extent the dress and customs of their ancestors.

They are healthy and hardy, being a living monument

to the salubrity of the Isthmian climate, and the native women are for the most part fine-looking, many strikingly handsome, with their rounded bodies well revealed by their style of clothing. From this part of the Isthmus comes the distinctive white linen head-dress, of which there is a separate style for the street, for church, for home wear, for balls, and for every conceivable occasion. These are worn mostly by one small tribe or clan known as the Zapotecs, and the yachtsman will miss much of his trip if he does not throw over the anchor in Salina Cruz and take the Tehuantepec railway for the short ride up to the town of the same name.

One can, if he so desires, continue his cruise from Salina Cruz on South, past Bahia Tonalá and Arispe, to which runs the Pan-American line, leaving the Tehuantepec railroad at San Geronimo, and even further down to Bahia Simon and inland to Tapachula, near the Guatemalan frontier, but, though I made this trip, both by land and water, I doubt if it would interest the ordinary traveler. It is more a journey for the sport-loving hunter who is seeking big game.

(To Be Continued.)



From a Photograph taken in Java by Mr. H. Sellinger

What Does The Rudder Say?"

THE STORY OF THE BUILDING OF THE LITTLE CAPER SUNDEW

O. E. Fischer



HIS amateur boat-building business is very much like entering upon the holy state of matrimony,—you do not know what you are in for. It is just as well that it is so, too, for though it is fascinatingly interesting, there might be no takers. But patience, pluck, and perseverance are winning qualities in either, and the right sort of a partner helps you over all the hard places.

The skipper's attic had witnessed the construction of three canoes—a kayak and two canvas cruising craft, each one larger and fairer-lined than its predecessor. Then the builder late one Fall joined a yacht club, learned to sail a catboat, and all at once awoke to a realization that he had missed about one-quarter of his life! This loss was partially made up by a careful study of a nine-year file of *THE RUDDER* from the local library—a fascinating set of books the seed of whose "How-To" articles has fallen on fertile ground and threatens to choke up the backyard garden with successive crops of boats—for the end is not yet. These bound volumes have been studied over and over again for new light on new questions, as one's interest in boats and building goes on widening out. The longer "How-To" articles supplement the gaps in the briefer, and for all the problems which will arise as you build your boat a *RUDDER* file will have an answer.

There was a peculiar pleasure in cruising your own home-made canoe: the delight of sailing your very own boat would be greater. Hence it was that the new sailor began a study of canoe-yawl and Barnegat sneak, sailing dink and sailing dory, Lark and Swallow, Ring Dove and racing cat, and made out an elaborate table which showed a comparison of the dimensions and peculiarities of all these craft at a glance. Sea-Bird and Marco Polo looked tempting but were too formidable as a "school for the boy," and yet he wished experience with a table of offsets, fairing-up, and to learn to look intelligently at a design. Schock's 14-foot Cape Cat Sea-Wren was thus seen to offer the most boat for the dimensions and the best initiation into the mysteries alluded to. Stephen's dictum, "The Capew has many positively good qualities as a rough-water boat of very limited draught, and is the best combination of speed, safety and all-round good

qualities for racing and cruising to be had on 24 to 30 inches draught," determined the final decision in her favor, and never for a minute has the growing or completed little Capew called forth a regret over her selection. From laying down to hauling out she has been as alluring and responsive as a sweetheart.

Early January saw 400 lb of sawed and seasoned beautiful white oak in the attic. It was the knockdown frame of Sundew. There were, moreover, the cypress garboards—looking like cedar—and the oak sheerstrake all sawed out. The freight bill and cost were surprisingly low. I could not have gotten all this material in this shape at double the cost and ten times the trouble at local yards and mills. The process of laying down the boat full size on detail paper had been very interesting, and gave trouble only in the diagonals of section drawing, because height at point of departure from midline had not been given. Sawed-out materials and patterns sent were compared with the full-sized design and found to agree exactly except that the transom was cut too small. This was later conceded and made good. A full depth skeg was also gotten out in order to reduce weather helm to a minimum. There is plenty left yet, for Sundew is a typical cat. An extra section was worked out for just in front of the transom. From the section drawings, patterns for the moulds were taken off with the compasses, thicknesses of ribbands, frames, and planking being allowed for, and the lines of these patterns pricked through on to the lumber, and center-sheer and water-lines also marked on each. A band-saw at a nearby mill accurately took care of the curves. The prospect of flopping an 800-lb hull over several times, like a campfire flapjack, did not seem alluring, and so I took the hint given by *RUDDER* pictures and built the boat bottom up. It was therefore necessary to strike in a base line above sheer and 36 inches from load water-line. The distance from this to sheer at each station gave the length of legs for each mould. Foresight is harder than hindsight—but it pays to go slowly and to think. Bottom up, it was easier to bend frames, take spilings, drive screws, calk, putty and paint and only one turning was necessary.

The forward parts of the husky spinal column were fastened together with 5-16-inch copper rod bolts, but in *that* oak the holes had to be bored, in part at least, full size. An oak keel 1½ by 10 inches also has a will of its own in respect to bending, and though it came to the curve of trunk logs easily enough and was held there by 4-inch brass screws until drift bolts could be added, it took a house-raising jack-screw to swing it to the curve



Backbone Ready to Set on Moulds. Will It Fit?



Ribbands in Place and Rabbet Cut

of the skeg and hold it there while lag-screws drew it down into perfect contact from above. One of these went down through the transom knee, but one kindly twisted in two! There are times when language is inadequate! Paint was applied before two wood surfaces were brought together throughout the work. The head ledges were set in cotton flannel soaked in paint and then riveted up.

The song-sparrow and bluebird had arrived when Sea-Wren came out of Winter quarters and rammed her beak through a plate-glass window in her outdoor descent from the attic. Foundation and moulds had been set up level and true, with load-water plane parallel to base, and upon these the backbone was to settle and grow ribs and skin. All ribbands were screw-fastened over the moulds. An extra-nice hard pine ribband was set about on the line of diag. 3 to be fastened to each frame and be left in place as a bilge stringer. It was the only real addition made to the construction plan, and it was a good one. March saw the rabbet—so often held up as a *bete noire* to the amateur—well started. A mould for station 1 made it easier. It was a sort of Easter rabbet. Between April showers we were bending (and breaking) frames. Then a neighbor, trained on Grampus Jabberwock, came to our rescue and inspired new cheer when he demonstrated how to get the most out of that steam box. Then things went beautifully—but it took two weeks. About one rib in three broke, so we had to get more. The soft green ragged red oak pieces procured from a bending company contrasted unfavorably with the fine stuff received from the “knockdowners,” but it bent easily. The pictures clearly tell the story of these all-important early stages. During the bad days

of April the transom was joined up indoors by means of oak marginal reinforcement which gave additional landing for the planking. Nails through the heels of the frames could not be driven home until the moulds were out when the boat had been turned. The hole for the king-bolt had to be bored before planking. The heels of the forward frames were set in deep notches along the back-rabbet. Then the floors required three weeks of endless fitting, several were added and all fastened with screws and copper nails clinched through the frame. Every fastening everywhere had to be bored for and a variety of braces, an auger extension and a hand drill were equally indispensable. When cork-pine stop-waters had been driven where scarfs crossed the rabbet and a handsome stained transom had been truly set in a notch in the keel, the big first third of the work was done and Sundew was ready for her planking.

The garboards went on easily. The first yellow pine board, gotten out in one piece, had a sly that made the grain run badly and it broke forward. A second and a third, in bow piece only, with good grain, followed suit. The rapid change from vertical to horizontal was too much for them. Then I went and spoke to a ship carpenter and he said it was good form to steam plank rather than break it. This done the two pairs of broads behaved nicely, and carried the planking well out to the turn of the bilge. The inner surface of all planks was painted and allowed to dry before they were fastened. Patience and careful spiling, a planking chain-clamp, and lots of screw-clamps (and some head-work) made the rest of the planks—all cypress—go easily, but it took time. In the midst of it came an enforced interruption of seven weeks. But during this time the skipper had a chance to



Keel in Place. Ready for Ribbands

Photos by Fischer



Ready for Frames. Note Extra Mould at Transom



Frames Bent Ready for the Floors

see salt water through the eyes of one awakened to the delights of sailing and to measure up and sail a small cat on Little Narragansett Bay. This convinced him that Wren was all right in spite of the fresh-water doubters. The Detroit market had proved to be a poor place to secure boat-building supplies, so a west-bound Pullman brought back for Sundew a supply of $\frac{1}{4}$ -inch galvanized rod for her centerboard and rudder, oak plugs for her sheer-strake and transom, and galvanized screws for her planking. These last cost one-third as much as the brass, and behaved much better under the stress of a ratchet brace. Unharmful, Sundew had come through Summer weather by virtue of a good canvas paulin and paint. Some ribbands had been removed to make room for the floors: the rest were taken out as planking progressed, except the bilge stringer. Butt blocks were placed as far apart as possible, made of good width and fastened with long galvanized nails. Plank fastenings were mostly $1\frac{1}{4}$ and $1\frac{1}{2}$ No. 8 brass and galvanized screws along the edges, supplemented by copper and smaller galvanized nails elsewhere, clinched on inside. Blessed be the name of the genius—unhonored and unsung—who discovered the magic of soap upon a screw! That is the greatest labor-saving device since Adam invented love at first sight.

The seventh was the shutter-plank and though it did not "require driving into place" it fitted with a good calking seam, as did all the others. That was a happy day! Now even Captain Slocum was diffident about his ability to calk Spray, but he did it, and following his illustrious lead, I was jealous of all interference. The cotton was partly twisted, looped back and driven in firmly so that the welkin rang o' mornings and at dewy



Work Resumed. Side View, Sheer-Strake in Place

eve. A few seams done, it was "pay as you go." Planing up the hull was easy, as the edges of the strakes were about all that needed it, and those along the bilge were of the same thickness as the others. Then patient sand-papering and a priming coat worked the usual wonders. Puttying was done with a commercial crevice filler and seam composition, the load water-line marked in by means of level straight-edges at stem and transom with chalk line stretched between, and when a powerful stove-hoisting tackle had been borrowed of a ship-hardware dealer Sundew was approaching her first—and let us hope, her only—capsize. With a rope sling amidships, the moulds were cut adrift, and the heavy aid of two neighbors accomplished what was really a heavy job and landed Wren "right side up with care." The only thing broken was the Sabbath. How we feasted our eyes on the new view of the hull! Whatever you do, do not build a homely craft; for you will need the lure of beauty, as well as that of prospective good times, to hold you to the job when you are tired and discouraged.

Before September got by, the rudder and centerboard were made. These were of $1\frac{1}{8}$ -inch oak, not too dry, in 6-inch strakes except the bottom one, tongued and grooved, bored with special augers, edge-bolted with $\frac{1}{4}$ -inch rods 10 inches long and then chamfered down along cutting edges for a $\frac{3}{8}$ -inch half-oval brass binding. The centerboard was not weighted but sinks just right with its centerboard rod. A threaded piece of piping was put in for the king-bolt to wear upon. Described in a few seconds, the doing of all these things required days. Oak clamps, 1 by 3 inches, were fastened with a screw to every frame, and with a few large nails going through from the top strake. Inch tongue-and-groove, hard pine, flan-



Floors in Place Ready for the Garboards



Transom and Garboards in Place Ready for Sheer-Strake



Only Three More Planks

nel and paint built up the centerboard trunk. Two breast-hooks were put in, the upper one resting on the clamps and filling in solid to the first deck beam to help take mast strains. Before this the entire inside of the hull had been thoroughly painted gray with a floor and deck paint, and here Sundew made a new record in that she is probably the first boat cleaned with an electric suction cleaner. This got at every nook and cranny and gave the paint a chance. Dr. B., of Grampus-Jabberwock renown, saw the boat, was duly "Schocked," and enthusiastic over "a fine strong boat—and such beautiful lines." Dr. C., a small boat sailor from his youth up, said, "Strong as a keg, steady as a church; Doctor, you will have a lot of fun out of that boat!"

It was now October. Winter was coming on apace and a feverish race with old Boreas began. The shortening days brought up the prospect of having a new boat almost done and then perforce having to postpone her trial trip until a long and weary Winter should drag by! "No, sir! that would be torture," said I. "We must launch her and if we get only one two-hour sail that will cheer me up all Winter!" Enthusiasm often simulates insanity. Orders were placed for the spars and sail. Endless fitting and beveling and fastening under difficulties was the story of that long line of deck beams and knees. The mast-step was cut in the stem knee exactly below the center of a 5-inch hole in a 2-inch mast-partner. Hard pine was preferred for the king-plank, everything painted looking inside and the decks screwed on. Carlines of oak had to be dressed down to $\frac{5}{8}$ -inch before they would take the curve. (None are shown in the construction plan, but they were necessary for the side beams and coamings.) The vertical seat supports carry the record for being the only really exasperating



Planked, Planed, Calked and Partially Puttied

thing in the boat—and they do not show, at that! All the decking was painted, covered with heavy canvas held with copper tacks and then treated with buff floor-and-deck paint. The aft head-ledge had been cut with a curve forward and though this gave more room aft it made extra work in shipping the centerboard. The builder-skipper did not vote on Election day because he was setting paint-soaked cotton around the centerboard bolt, putting a Cape Cod nose on the stem head, affixing the stem band, loading in five bags of concrete ballast so that they might harden *in situ*, for the morrow was to be Sundew's baptismal day!

Then Herman—every water-lover hereabout knows Herman—took command on a frosty morning, feared not for his coat or the too-new coat of paint on the hull, and Wren, nearly fledged, rose in the world and settled on a light wagon. At a brisk trot she soared along over a mile of faultless paving, stopped to learn that she weighed 1,080 lb, and took the water at four bells. Nearly two inches of her brown load water-line floated free. "If she doesn't leak she's no good," said Herman. Then he crawled around in her a while and reported "Dry as a bone." Cleats for the halyards were set on the deck and aft on the centerboard trunk. The traveler was held with stove bolts. It was a fine day and at sundown Herman said, "We're going to have a bunch of them." That night it poured and then blew a Northwest gale for four days, and fitting out went on under difficulties. When all was so far ready Herman mounted the roof and noisily bossed the stepping of the 4-inch mast.

"It seems high," said I.

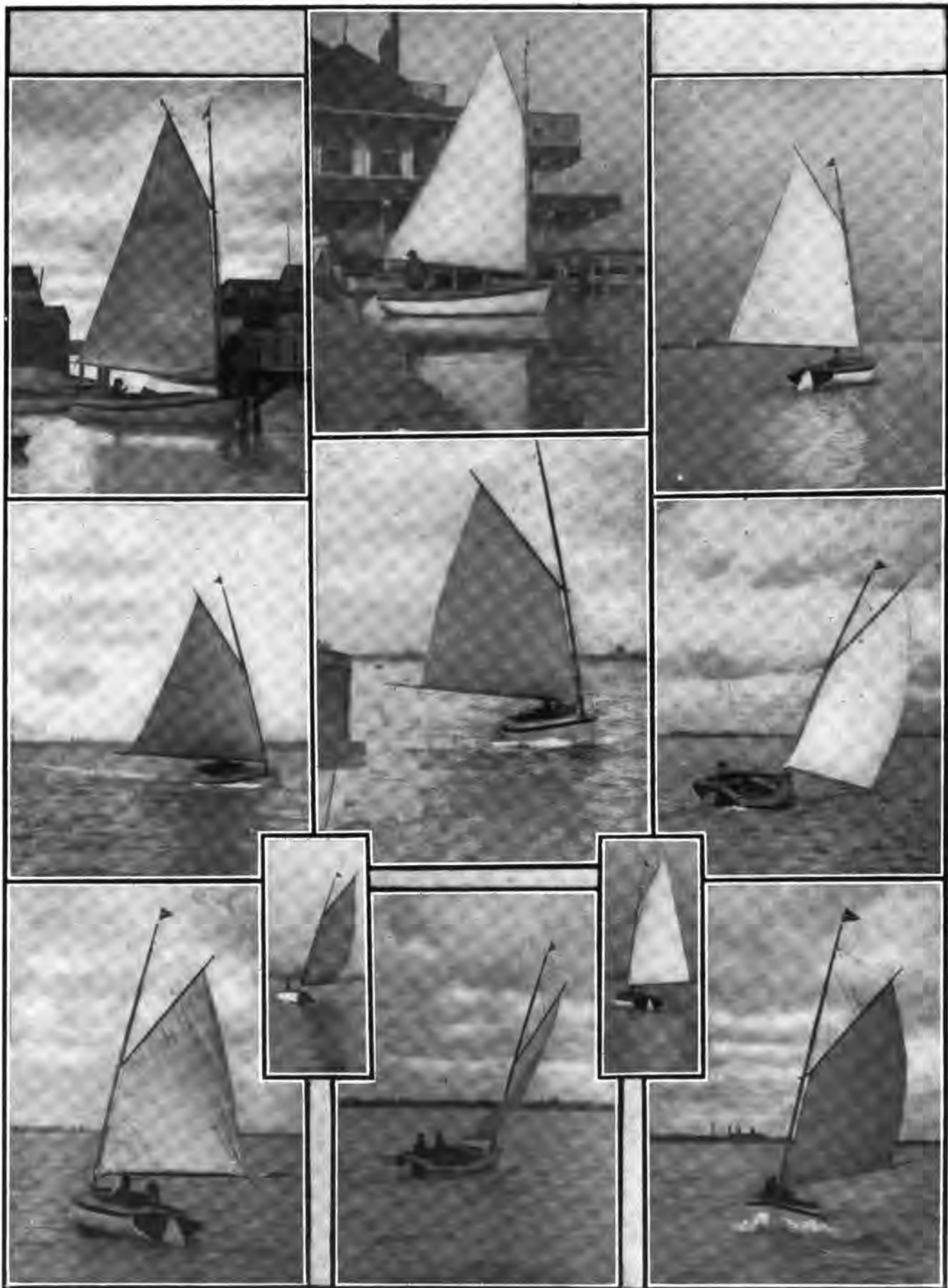
"Yes," said Herman. "Now take it out and saw off six feet!"



Safely Over Moulds Still in Place



View of Interior After Removing Moulds



Views of the Sea-Wren Sundew in Action



From Starboard Quarter. Clamps and Breasthook Fitted, Centerboard Trunk Partly Finished

"No, sir," said I, "that's the way the architect designed it."

"All right," yelled Herman, "but do the architects ever sail 'em?"

I argued that if Wren could carry 205 square feet on old ocean she could stand it here.

And so I called upon a crack D. Y. C. catboat sailor friend to help me on that first cold breezy Sunday morning. We promptly got a knockdown when we got out a bit and came back to double-reef. Then followed two hours of glorious fun, shared with club friends and coldly recorded by the camera. Sea-Wren Sundew made a sensation and scored a success. As she rode at the club dock, there came in under triple reefs and all unexpected her veritable double—another Sea-Wren! As the two boats rubbed noses their skippers compared them in detail and asked each other how they had worked out this detail and that and by virtue of similar experiences, cemented fast friendship. Squall, for that is her name, differs in having a flat deck extending only to the forward head ledge, no seats except the side deck, a more heavy centerboard trunk construction with deeper floors between which paving brick would fit nicely.

Whenever, during the next ten days, Sundew was on the river or lake Squall seemed to scent her presence from afar off, and a little brush at racing was inevitable. Unballasted and with her home-made sail she proved no match for Sundew—but her skipper significantly warns me to look out for next season. Old Boreas held off on a few days and gave us a chance to try full sail and to show that we could keep abreast with the older D. Y. C. skipjacks. With boom squared off in a brisk wind the little Caper gripes like a herb doctor's pill, but experimenting with the ballast—some 300 lb—may largely cor-



Finished—the Day Before Launching

rect this. She is very stiff when past a certain angle of heel and I was never able to put her lee rail under. "She handles beautifully," is the verdict from others.

Hauled out under the trees, Sundew slept snugly under a canvas roof while ice-boats scooted around near her. But her skipper visited her often and thought about her constantly. He is now figuring her C. L. R. and C. E. S. so as to learn how it is done, is planning her ballast, a cockpit tent for her, and studying the Lakes Survey maps of Ste. Claire. It looks as though a cruise were being planned for this season. He is learning a bit of marlinspike seamanship and is fitting to her the various rules for time allowance she might get if matched in scrub racing against the D. Y. C. Taft Cup contestants. Impatiently we wait until

"the sap begins to stir,
When April's flowery hand delivers
All the mountain-prisoned rivers,
And her great heart beats and quivers
To revive the days that were."

The following summary is a list of the costs of construction of the Sea-Wren Sundew:

Knockdown frame, freight and cartage.....	\$15.75
Rough lumber.....	5.50
Dressed lumber.....	36.00
Fastenings	10.70
Band-saw, jack-screw and labor.....	2.40
Paints, oils and putty.....	9.70
Halyards, blocks and fittings.....	11.60
Sail	17.50
Mast, spars and launching (near).....	15.00

\$124.15



Putting on the Deck



Ready to Go Overboard

HOW TO BUILD A STERN-WHEEL LAUNCH ALLIGATOR

R. M. Haddock

PART I



IN THE inland waterways of the country there are thousands of miles of shoal rivers and lakes in which the ordinary launch with a draught of two feet—and the screw-propelled boat seldom draws less excepting in some of the tunnel-stern type—can be navigated with any degree of immunity from being shut out from many desirable cruising grounds by bars and shoal spots, that would furnish

good sport in the way of cruising and hunting. It is to meet and overcome these conditions that the accompanying design was produced.

The stern-wheel type was chosen in preference to the tunnel-stern type for the reason that the hull can be of less draught and that the wheel, which does not dip as deeply as the hull, is very much less liable to injury than the screw, and in the event of injury can usually be repaired with but little trouble and simple carpenter's tools. Its efficiency in running in weeds is also another point in its favor, and it also can be readily got at at all times without taking the boat from the water.

As exemplified by the many in use among the commercial steamboats on our Western rivers the stern-wheel craft is not a thing of beauty from the viewpoint of naval architecture, but its great adaptability to the water in which it is used seems to have placed it in the class of "beauty is as beauty does."

The boat here shown retains as much as possible the characteristics and accommodations of the regular cabin cruising launch of ordinary type, and will make a comfortable craft for hunting trips or for more or less extended cruises on protected and shallow waters. The construction has been made as simple as possible and the interior finish can be as plain or fancy as the desire or mechanical limitations of the builder wishes.

In general the arrangement is as follows: First there are 7½ feet of fore deck under which is the gasoline tank of cylindrical form, 20 inches in diameter and 4 feet in length, with a capacity of 65 gallons. Each side and under the tank is space for stowage of anchor lines, etc. Also a feature is made of having two bitts, which will be found extremely handy in many cases and should be adopted in the ordinary types, as it is very inconvenient to have to make fast two or three lines to one bitt, especially if one needs to be cast off or taken up and the line wanted is underneath. Chain deck pipes will lead the lines below.

Next aft is a stateroom having two berths with slat

tops and extension. Then on the starboard side comes the toilet room with closet and lavatory. On the port side opposite are two good-sized wardrobe lockers with space for hanging and shelf at top. These lockers are lighted by a fixed glass window, which is a convenience in finding things. Next aft come the main cabin in which on one side are the galley fixtures, consisting of a good-sized refrigerator, stove, and sink with lockers under for cooking utensils, lamps, etc. At the after end is a pantry locker fitted up with shelves.

On the starboard side is a berth with extension slide which can be made to extend to form a double berth if desired, and at the after end is a short locker which will be found very convenient for small items. The cockpit, which has a raised floor with storage space underneath, comes next and is of a fair size, being about 7 feet in length and 7½ feet in width, and provides room to make up two or three sleeping places in addition to that in the cabin, protection being had by the awning curtain.

Aft of this cockpit proper is the engine cockpit, wherein is contained the entire power plant of the boat, which is out of the way and leaves the rest of the boat clean and unencumbered.

It is best, if possible, to provide a covered place to build the boat in, as, especially in the Winter season, it is much more comfortable to work in and a better job would result. If a suitable indoor place cannot be had, a temporary roof on posts should be erected. Good light and a well-braced work-bench, made of spruce plank about 2 feet wide and 18 or 20 feet long with two bench screws, will be found a great advantage. The ordinary tools, such as saws, planes, bitts, braces, hammer, screw driver, and the usual rule, bevel, square, etc., that carpenters use are about all that are required.

This article is more to explain the construction methods than the necessary equipment, and it is supposed that any one attempting to build a boat of this size has had some experience in the use of tools and is moderately skilful in their uses.

The general dimensions of the boat are:

Length of hull	35	feet	0	inches
L. o. a., including wheel	42	"	3	"
Length on w. l.	33	"	1½	"
Breadth, extreme	8	"	11	"
Draught of hull	0	"	9	"
Diameter of stern wheel	6	"	0	"
Width of stern wheel ..	4	"	6	"

The headroom in cabin is 5 feet 4 inches under the beams and has been kept low for appearance' sake; you can make the house higher at the sacrifice of looks if it is thought desirable for any special case. Of course there is the matter of windage to be taken into consideration also, as in a very flat boat of this type with forefoot cut away so as to permit running up to banks and shores.

the bow is apt to blow around and make the boat handle badly in high winds if too much house height is used.

Another reason for shaping the forefoot as it is, beside that of easy landing, is that the engine and wheel are both heavy weights carried at the extreme after end of the boat, and the underbody must be given sufficient displacement aft to float these weights in proper trim.

If you have been so fortunate as to secure a room with a level floor in good condition to build in and having erected your work-bench, we are ready to proceed with the laying down of the boat.

By looking over the line drawings you will see that there are two methods which can be used to get the form of the moulds.

These can be obtained by either laying out the lines full size and taking the measurements from them, or you can make the moulds from the ones shown, which have the dimensions marked on them. In case the lines are used they are to the outside of the planking and allowance must be made in making the moulds of 1 inch for the side planking, and $1\frac{1}{4}$ inch for the bottom planking. This has been allowed for in the case of the moulds and you can use the figures as they stand. One-half of each mould only is shown and dimensions are to be laid off equally on each side of the center line.

Always work from a center line if possible, as this assures the most accurate and symmetrical work.

The advantage in laying the lines down full size and taking the dimensions therefrom is that any small inaccuracies in the small scale drawing will fair themselves out by this method.

If you elect to do this you will need a spruce or yellow pine batten or ribband of clear stuff as straight as possible, about $\frac{7}{8}$ inch by $2\frac{1}{4}$ inches, as long as possible—20 feet at least and better if the whole length of the boat, even if in two pieces joined, nailing a 4-foot or 5-foot piece of equal dimensions where they join.

The first thing is to clean up your floor, and if it is too rough or dirty you can tack down some building paper for a space of about 6 feet wide by 40 feet long.

As there are very few lines to confuse one the half-breadth plan can be placed over the sheer plan, using the base line or water-line as a center line to save space.

First strike in the base line near the bottom of the paper. To do this use a chalk line made of a fishline, which will give a much finer line than an ordinary coarse chalk line as used by carpenters. Drive a nail at each end and stretch the line tightly after thoroughly chalking it, secure it so that it will not slip and then take it between thumb and forefinger about a foot or 15 inches from one end, raise it up about 3 inches and allow it to snap sharply, being careful to raise it as straight as pos-

sible. Do this also at the other end. It may be, if the floor is uneven, that you will have to put your thumb on the line in the middle and snap it each side to obtain a clear line.

You should go over this line carefully with a straight-edge and pencil to make it permanent.

You now have your base line; 10 inches above this base line run in the water-line by the same method.

Now you must erect the perpendicular lines, known as square stations, at which the moulds will come. This you can do by using a carpenter's 2-foot iron square.

You can test the squareness of these lines by measuring off 3 feet on the base line from the point of intersection and 4 feet up the station line. The diagonal joining these points should measure exactly 5 feet; if it does not your line is not perpendicular to the base line.

Your straight-edge should be about 8 feet long, $4\frac{1}{2}$ inches wide and $\frac{3}{4}$ inch thick, and dressed up true and smooth on edge used at least. These stations are to be spaced 3 feet $3\frac{3}{4}$ inches apart, which will give the water-line length of boat when all eleven of them are in.

Now referring to the sheer plan we are ready to run in the sheer line, which coincides with the top of plank-sheer or edge of deck. The figures marked on the sheer plan are the heights from the base line up, and you must set them off on their proper stations as shown. Then take your batten and tack it lightly to these spots. You can do this by driving a nail each side of it and not through the batten itself.

After it is all tacked in place, look and see if it is making a fair sweep and touching all the spots. If it is unfair at any station, remove the nail and allow the batten to assume its own shape, and tack again. A good deal of judgment is to be used in this fairing up, as it is termed. Sometimes the batten will come a little outside one spot and inside another, thereby making a sweet, fair sweep as it is called. Of course the flat side of the batten is to lay next the floor.

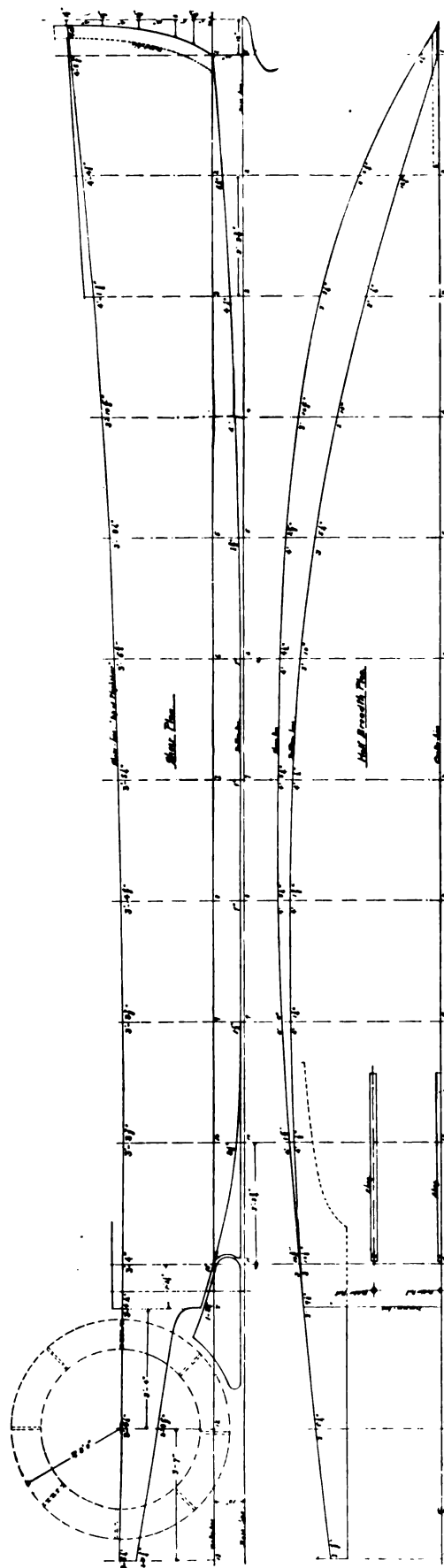
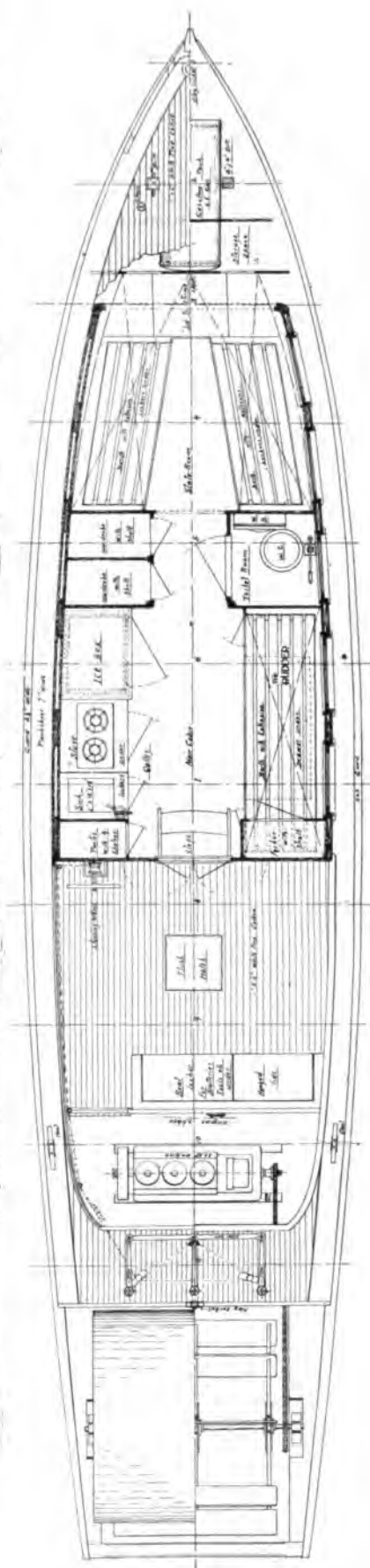
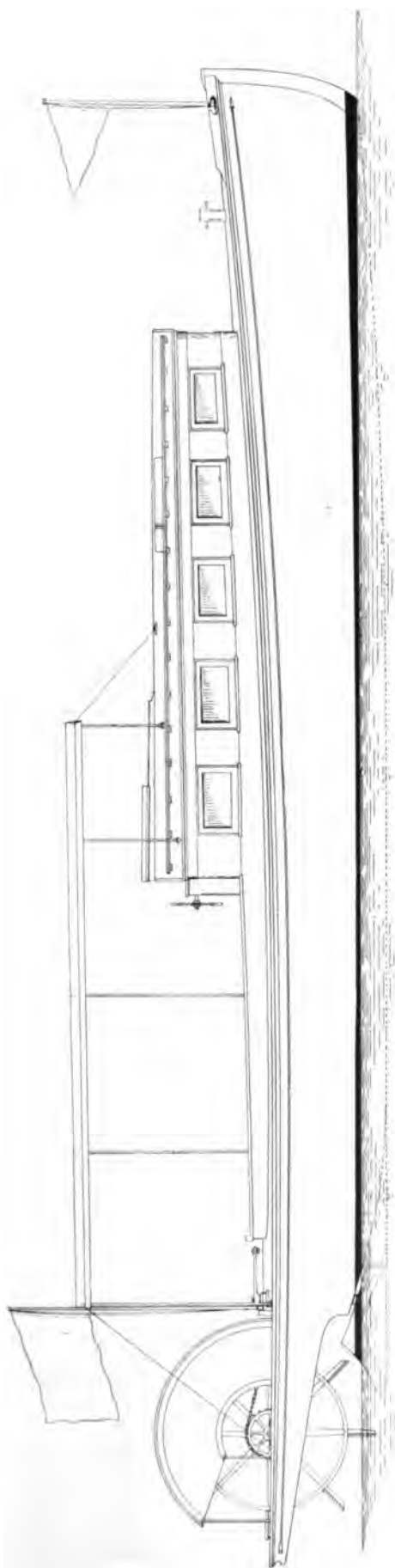
When fair to your eye, draw in the line heavily with a carpenter's chisel point pencil. Run in the other lines in the same way. Where the bends are sharper, as in the case of the stem face and round-up at the stern, you must use a smaller batten, about $\frac{1}{2}$ inch square, of white pine.

Now from these lines you can get the body plan by setting off the heights and widths. Use a small straight batten for transferring the points, as you can mark the exact point on this and it is less liable to inaccurate reading than a rule, and also you can reach the distance between points with one step.

After you have the body plan drawn in you can take off 1 inch from the sides for the planking and $1\frac{1}{4}$ inches

Sheer	Square Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	
Plan.	Sheer-line	4.8.7	4.4.7	4.1.3	3.10.5	3.8.2	3.6.5	3.5.2	3.4.3	3.3.7	3.3.7	3.4.0	3.4.1	3.4.2	3.5.2
	Bottom-line	0.10.0	0.6.6	0.4.2	0.2.6	0.1.5	0.1.0	0.1.0	0.1.0	0.1.1	0.2.4	0.10.0	1.2.2	2.4.5	2.11.6
Half Breadth Plan.	Sheer-line	0.6.2	2.2.6	3.3.2	3.10.5	4.2.5	4.4.2	4.5.2	4.5.2	4.4.0	4.1.5	3.10.3	3.9.1	3.5.2	3.0.5
	Bottom-line	0.0.3	1.0.6	2.0.2	2.10.0	3.5.2	3.10.0	4.0.2	4.1.3	4.1.2	4.0.1	3.10.1	3.9.1		
All dimensions given in feet, inches, and eighths to outside of planking. all heights given above base-line Base-line 10 inches below water-line. Square Stations spaced 3' $3\frac{3}{4}$ "															
OFFSETS No. 98. 35 ft. Stern-Wheel Launch. designed by R. M. Haddock, New Rochelle, N. Y.															

Table of Offsets of the Stern-Wheel Launch, Alligator. Designed by Roger M. Haddock



Outboard Profile, Accommodation Plan and Lines of Alligator

from the bottom for the bottom planking. These are the points needed for the moulds.

The moulds should be made of spruce or some such wood about $1\frac{1}{2}$ to 2 inches in thickness and 6 inches in width. Comparatively rough stuff will serve this purpose very well.

In fastening the moulds at the bottom care should be taken not to nail in the lower outside corners, where the dotted line shows the piece that has to be cut out of the mould after it has been set up in place to allow the chime piece to be put in.

At this point I will digress to say that the bottom of this boat is absolutely flat across, as this gives the least draught possible.

It would make a somewhat stronger boat to give the bottom frames a curve or crown of 1 inch in 8 feet. This is a little more trouble to do, and increases the draught about $\frac{1}{2}$ inch, as the increased cubical contents will lift the boat somewhat so that the entire inch is not added to the draught.

We may as well explain how to lay out such a curve at this time as it will be wanted for deck and house beams later on.

The proper way to do is to make a pattern of light stuff and mark all the frames or beams as the case may be, from it.

Having selected the piece lay off a straight line, in the case of the bottom frames a little over 8 feet, erect a perpendicular line $1\frac{1}{2}$ inch, say, in the middle and lay off 4 feet each side. Now as the crown is to be 1 inch, set your carpenter's compass to 1 inch and describe a semicircle at the center line using the intersection at base line for the center. Now divide each side of the radius on the base line into four parts, and also each side of the circumference of the circle into four parts and connect these points in their order base to circumference on either side as shown in the detail sheet.

Now divide each side of the base line into four equal parts, in this case 1 foot each, and erect the radial lines,

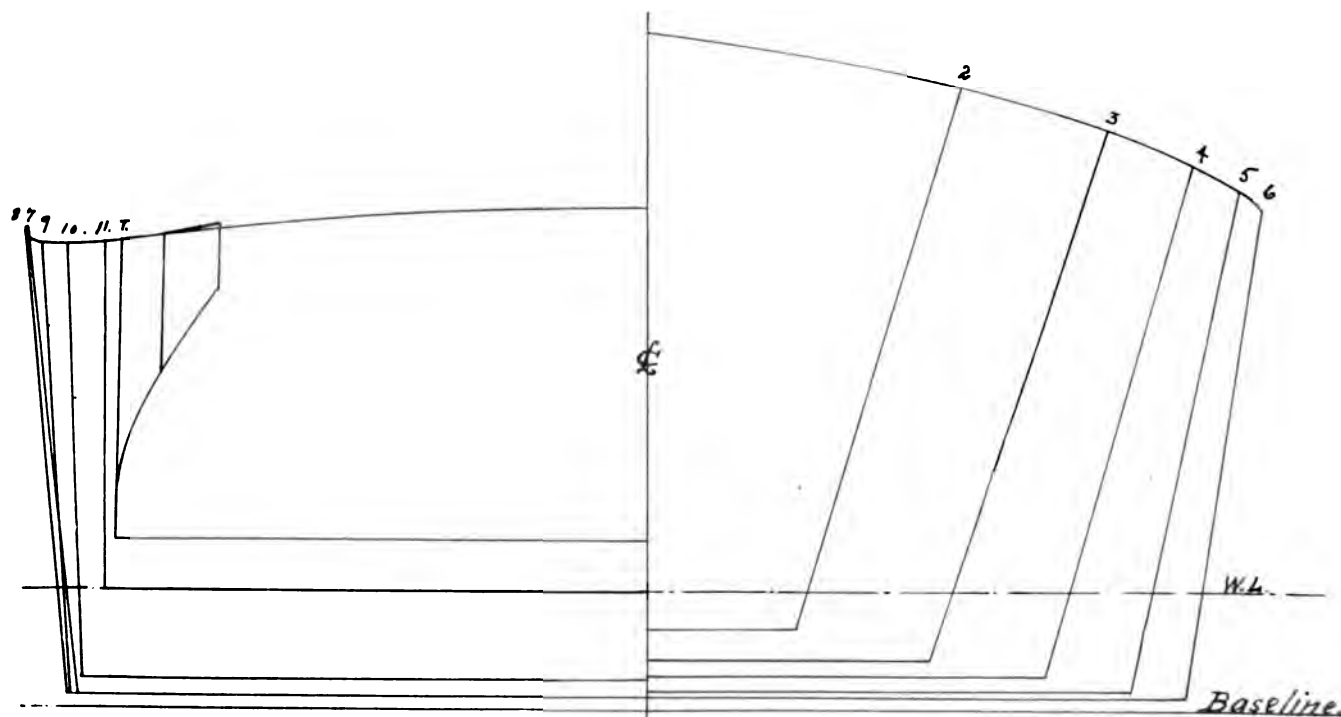
making the same angle with the base line as they do in the semicircle, at each of the divisions. Having done this transfer the points of intersection of the circumference to their respective radial lines and spring a light batten through these points, and you may draw in your curve, obtaining a portion of a circumference of a true circle. A little study of the detail will make this operation clear. The divisions need not necessarily be four as any other number would do, only you must be careful to lay off the same number on the base and in the semicircle.

In the case of a deck beam where you wish to crown say 4 inches in 8 feet, the semicircle would have a radius of 4 inches, and this same principle applies for any amount of crown for any length base. When you have the moulds securely made mark the water-line plainly and carefully on back and front faces of both sides of the mould and also the line where the underside of the plank-sheer is to come. This line is 1 inch below the dimension line at the top and side of the moulds. The line given being the line at top of plank-sheer or the deck edge.

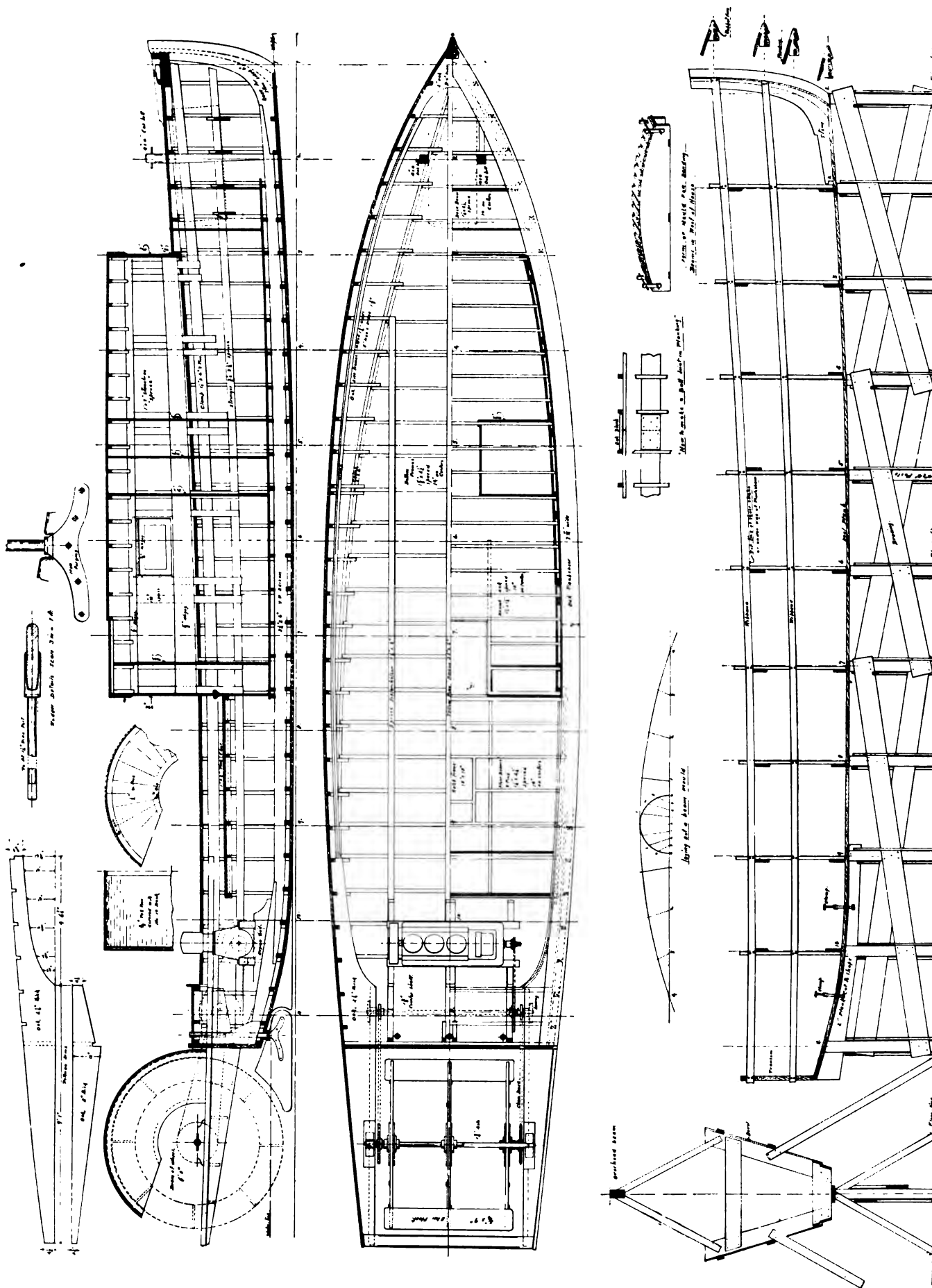
The reason for marking the water-line is that it affords a good reference line in determining many other points during construction and should be placed on the frames in the same manner as they are put in place.

Now the boat is shown set up on a horse, as it is called, 3 feet from the floor, so that one can work to advantage underneath in planking the bottom. The boat could be set up and the hull planked bottom up, but it would be quite some work to turn over without considerable help and liability to injury. It is of course somewhat easier to work with the boat bottom up, and a boat can be turned over quite readily if you have a good strong beam overhead, when you can attach a block and tackle at the bow and stern and suspend the boat on an axis as it were.

A hole is bored transversely through the stem and another at the stern at a point nearly in line with the boat's center of gravity, which can be approximately found by cutting out the boat's hull profile in thin wood



Body Plan of Stern-Wheeler Alligator



Construction Plan and Details of Setting-Up Horse for Alligator

or heavy cardboard and experimenting a little to find where it balances on an axis parallel to the water-line. Will leave this matter to whatever conclusion seems to have the most advantage to yourself.

To take up the original suggestion as shown on the plan, that is, to keep the boat right side up we must erect a post about 4 by 4 inches at each of the square stations to conform with the bottom line of the boat.

If your floor is rough and uneven you had better lay a 2-inch plank well blocked and shimmed up as to the uneven places and carefully lined and leveled up to form a base to set up the posts and as a base to measure up from.

Say you decide on 3 feet for the height, it is only necessary to add the dimensions shown on plan giving the heights of the bottom line above the base line, e. g.: on stations 6, 7, and 8 the post would be 3 feet 1 inch in height, and on station 5 it would be 3 feet 1 5/8 inch and on 4 it is 3 feet 2 3/4 inches and so on. This will give the contour of the bottom of the boat.

You will see that at the stern a board is let into the posts and shaped to the bend of the plank that forms the keel. This gives a good chance to fasten it so that it will keep its shape till the frames are in and the boat planked.

It may be necessary to steam some of these planks to get them in place. There is quite a difference as to the bending quality of the same kind of wood, and sometimes a good soaking in hot water will be sufficient, as would likely be in this case, and some plank would go cold. Should it be found hard to bend these planks into shape at this point a simple steam box can be made from rough stuff about 10 feet long. Do not close up the ends, but use a block of wood wrapped in old rags to block up the ends as the case requires. You see that if you want to steam a long plank in the middle you can push it right through the box and stuff rags around the ends. An old

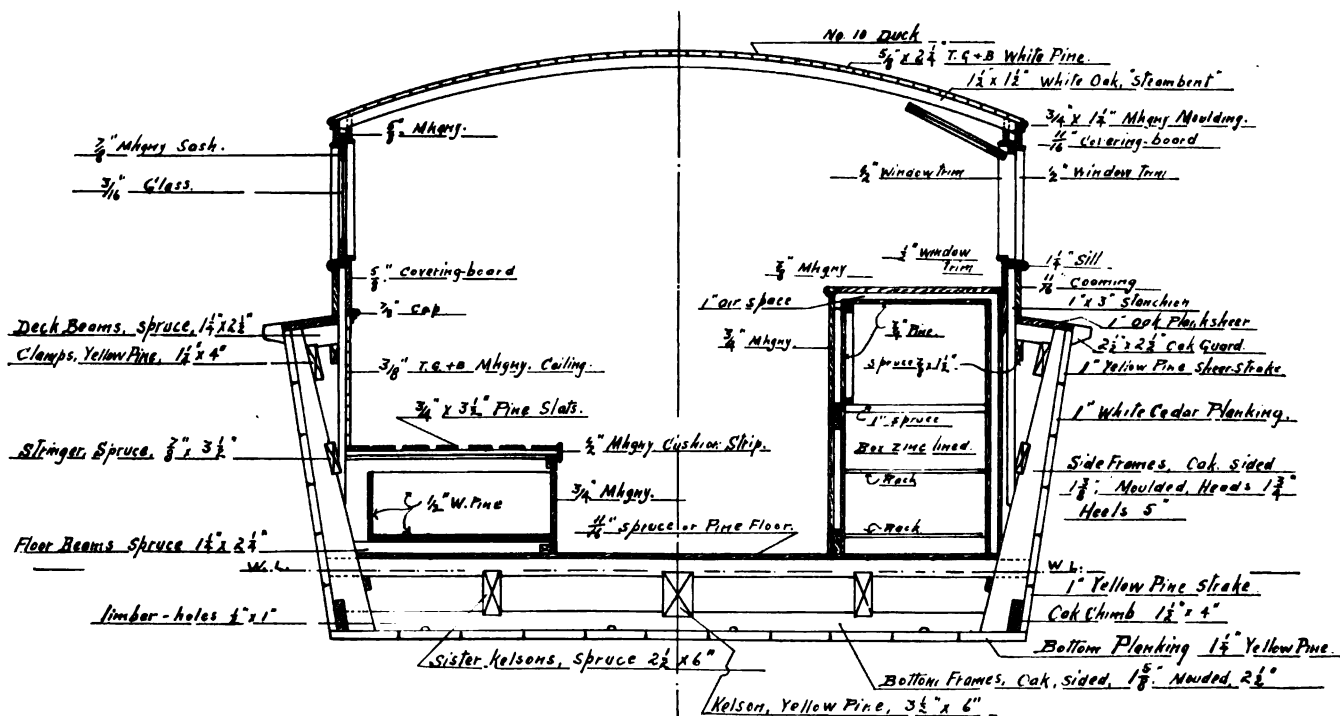
hot-water boiler laid on its side on some bricks and piped to the box which is close up to it, makes the best and simplest outfit. You build your fire of wood and chips right under the boiler for its whole length and quickly get up steam. Most any plumbing shop or junkman has plenty of discarded boilers that can be had for very little money.

To return to the setting-up horse, will say that it is best to leave all posts a little long and to cut them off at the proper height after they are securely braced in place.

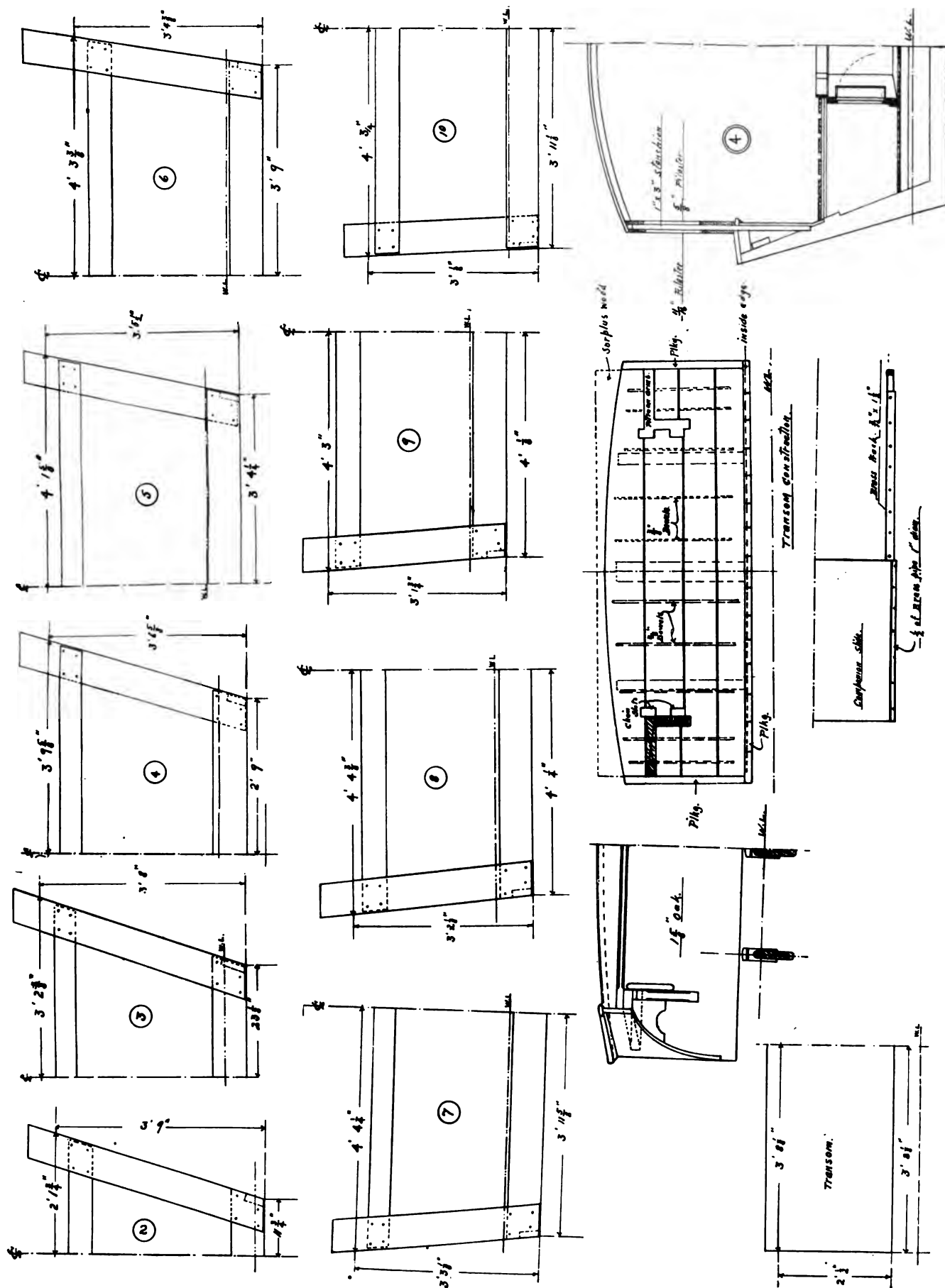
Having done this the next thing is to take the center or keel plank, which will be of yellow pine 1 1/4 inch thick and 6 inches wide, and if possible the whole length of the boat. If it needs steaming at the after end, take it directly from the box while hot and you can force it down to conform to the shape of the horse with a strut from the beam above and some hardwood wedges. It can best be held in place by some 6-inch boat clamps, cutting holes in the horse to take the toe of the clamp. These holes to be cut before board is ready to be put in place.

The fore part of keel has so little bend that it can be tacked readily in place with a cleat across underneath and tacked to both plank and post.

Carefully square across this keel plank the square-station lines to which the moulds are to be set. Observe also that the moulds forward of station 6 are set with their after edge on the line and that those aft of station 6 are set with their forward edge to the line. This is so that you can bevel the edge of the mould so that the ribband will fit up tight and give you the right bevel for the frames. An oak or hackmatack knee should be used to make the stem, and it should be sided 4 inches, which means that it should be 4 inches thick. It is best to make a pattern of this stem out of about 3/8-inch pine, and you can take it to the boat-builders or yard where you get



Midship Section and Scantling Details of Stern-Wheeler Alligator



Moulds of the 35-Foot Stern-Wheeler Alligator

the knee and can be sure that it will fit by laying the pattern on the different ones till a selection is made, being careful to see that the wood is sound where covered by the pattern.

At this time it will be well to speak of the woods that are to be used, those selected being about the best for this work and are generally obtainable in most parts of the country.

The framing should be of good seasoned white oak and should be clear straight-grained stuff. Natural seasoning is preferable to kiln-dried if it can be obtained in a good grade.

The stern transom also should be of oak $1\frac{5}{8}$ inch thick. The keelson to be of yellow pine, as also the clamp and beams under cockpit floor. Sister keelsons, floor beams, deck beams, stanchions, side stringer, deck beams, and much of the seat framing, etc., are of spruce, which is light, strong and easily worked.

The bottom planking should be of yellow pine $1\frac{1}{4}$ inch thick. Top and bottom strakes of the side planking of the same wood 1 inch thick, and the rest of the side planking to be of white cedar, cypress, or white pine 1 inch thick. The cedar is the best to use.

The decks and cockpit floor and roof of house should be clear white pine, while the plank-sheer should be of quartered oak. House preferably to be of mahogany, if to be finished bright. Can also be of quartered oak, ash, cherry or chestnut; cypress and white pine can be used if painted.

The interior can be as fancy or as plain as desired. If to be finished bright butternut makes a good finish and is light both in appearance and weight. The choice of woods is largely left to the builder as to taste and facility in obtaining them.

As a rule the oak is rather heavy and weathers badly and is hard to bring to a fine finish, dulling the tools very fast, and should not be a first choice for the house trim.

To return to the stem piece, it should be about $\frac{7}{8}$ inch wide on the face to receive the stem band and be shaped in section as shown on plans.

Cutting the rabbet to take the ends of the planking, while it is held up as a bug-a-boo to the amateur builder, is after all a simple matter if one will remember that the planking is always cut square across the ends and then it is let in at rabbet line flush with the stem, still retaining the angle at which the plank meets the stem.

In other words the face of the rabbet is at right angles or square to the inside face of the planking where it meets the stem and the depth is the thickness of the planking. It is perhaps better to leave this cutting of the rabbet till the moulds are up and the ribbands in place, as they will show the angle of the planking.

The stem should be secured to keel plank as shown and with $\frac{3}{8}$ -inch bolts or rivets made of galvanized iron rods headed up, over washers. The transom should also be fastened in place at this time and serves for the end mould.

The transom should be put together with $\frac{3}{8}$ -inch dowels made from the same iron rods, care being taken to bore straight so the dowels will drive fair and draw the different planks up close. Use care to see that the dowels are not placed where they will interfere with the pitman arms or the slot for the driving chain where they come through the transom. This is shown on plans, a careful study of which will do more to clear up such matters as cutting the rabbet and making and setting up the transom than pages of description in the text.

Having gotten the moulds in place and properly braced as shown we proceed to place the sheer ribband in place. This ribband should be of spruce or yellow pine about $1\frac{3}{4}$ by 3 inches, the lower edge to just touch the line on the moulds that mark the upper edge of the sheer-strake which is also the lower edge of the plank-sheer. Put one ribband on each side of the boat and then the other pair shown below the top one.

It would be better to put a temporary ribband about 6 inches up from the bottom of the moulds to hold them securely while cutting out the notch to receive the chime piece. This piece is of oak $1\frac{1}{2}$ by 4 inches, and is to afford secure fastening for the edge of the bottom planking. The dotted lines in the corner of the moulds show this notch. A ribband should be tacked on the underside of the moulds about two-thirds of the distance out from the center to act as a support and guide to the bottom frames as they are put in place. Ribbands should be securely fastened to the moulds so that they will not spring off easily. The best way is to use long screws with an iron washer at the head, as you can draw ribband up tight without splitting it.

The bottom frames are of oak $1\frac{5}{8}$ by $2\frac{1}{2}$ inches. They will be perfectly straight on all sides unless you elect to give them the curve or crown of 1 inch in 8 feet, as mentioned earlier in this article. Of course you understand that if you do this you must also cut the bottoms of the moulds to the same curve when making them. Remember also that the outer edge of the mould is the same point as when flat and that the crown is at the center, thereby increasing the depth of the mould in the middle.

You can now begin to put in the frames, commencing about amidships and working towards the ends, as the frames are simpler to fit amidships and require less beveling.

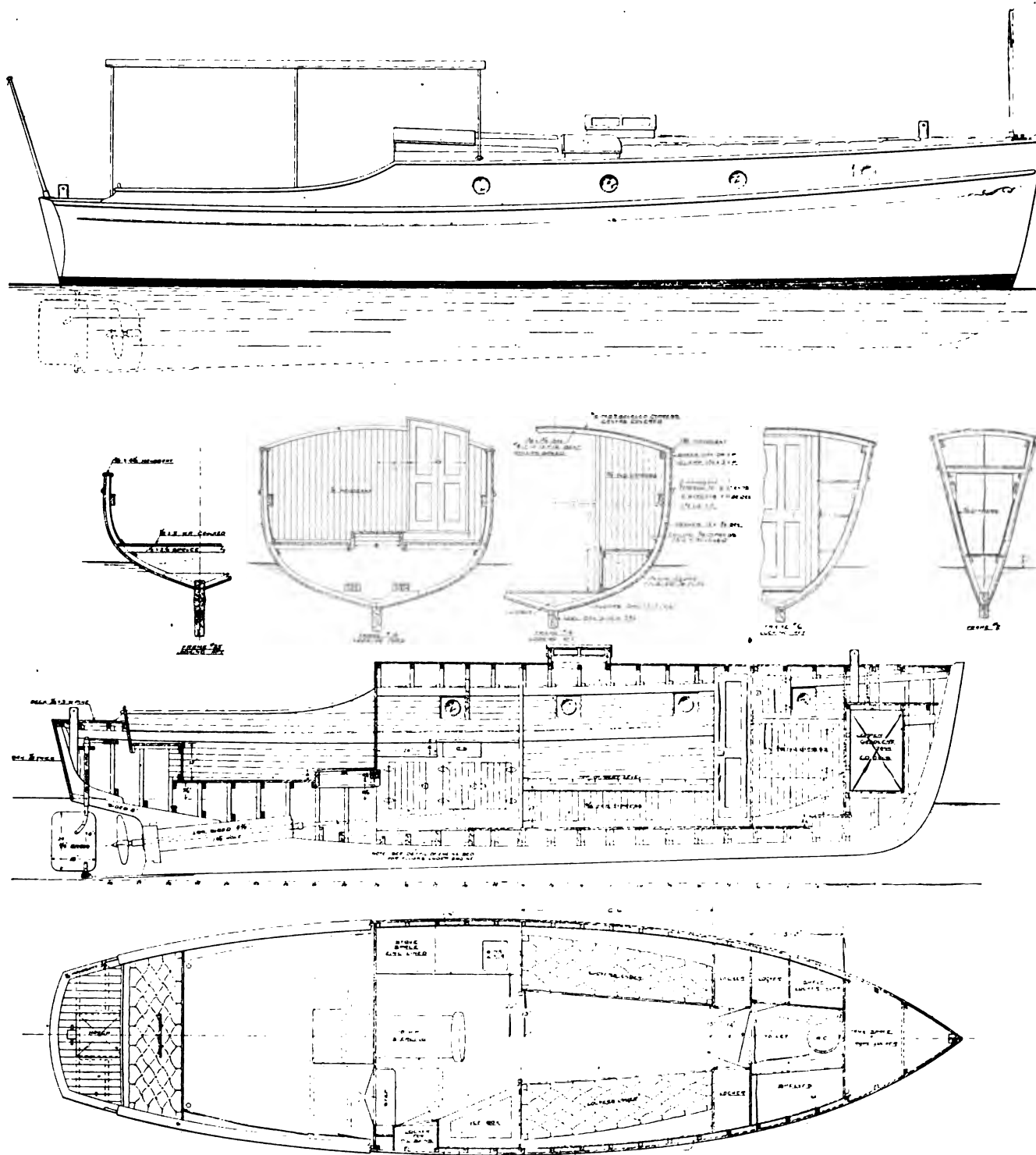
This beveling must be carefully done so that the planking will fit tightly and touch the frame for its whole width. It will be found a help and guide to use two lighter ribbands on each side about midway between the chime piece and center ribband and between the sheer and center ribbands.

The bottom frame must be secured to the keel plank with two galvanized or brass screws up through the bottom about 1 inch in from the edges of the plank. These screws should be counterbored to let their heads in about $\frac{1}{2}$ inch into the plank and the holes filled with wood plugs. The screws must be bored for with a German bitt slightly smaller than the screw. The counterbore is done with a regular $\frac{1}{2}$ -inch auger bitt. Wood plugs, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ inch, etc., can be had at any boat-builders to fit tightly the different bitt sizes. The plugs should be dipped in thick varnish or glue before driving in. For the bottom fastening a No. 16 $2\frac{3}{4}$ -inch screw, with a $\frac{5}{8}$ -inch plug, and for the side planking a No. 14 $2\frac{1}{4}$ -inch screw with a $\frac{1}{2}$ -inch plug would be about right. In putting in screws always soap the thread with a piece of common yellow soap, which makes them turn easier, draw up tighter, and in the case of brass screws is a necessity to prevent them breaking off when set home.

You can use galvanized nails for fastening if preferred. These also must be bored for and counterbored the same as the screws and should in no case come through the inside of frame.

Screws must be used to fasten the planks on both ends and along the edge of the bottom even if nails are used elsewhere.

(To be Continued.)



Thirty-One-Footer. Designed by H. W. Patterson and Built by The Milton Boat Works, Milton Point, N. Y.

THIRTY-ONE-FOOT CRUISER

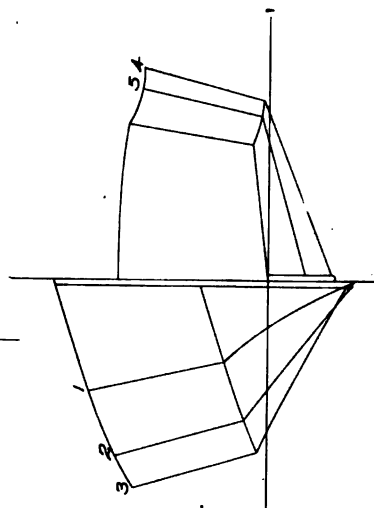
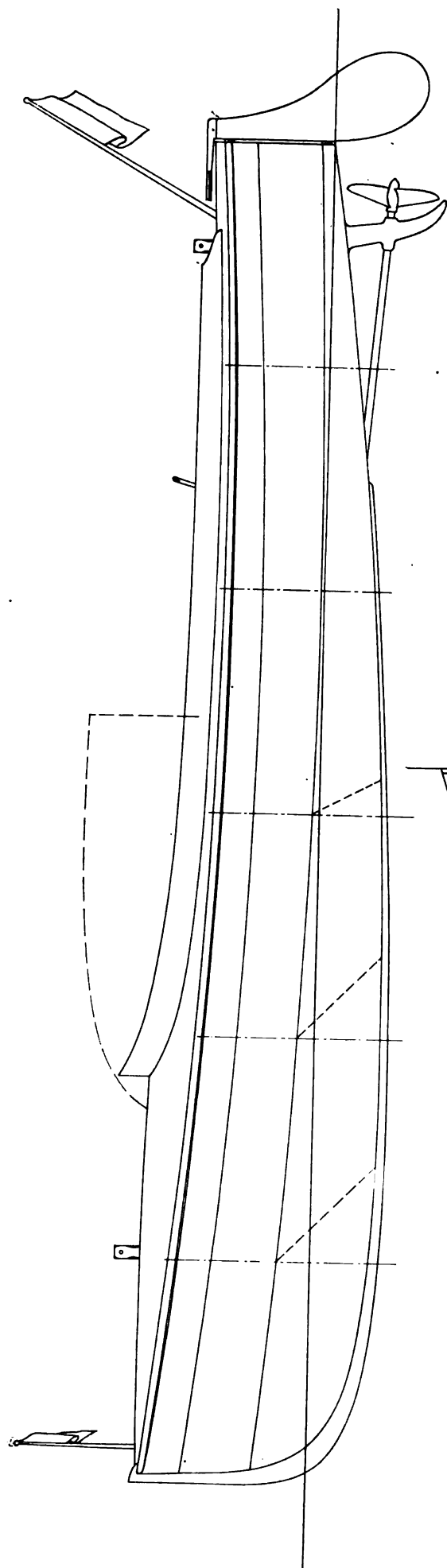
THE 31-footer shown above was designed by Mr. H. W. Patterson, and built by The Milton Boat Works, and shows a craft very similar to the very successful Elmo II, which craft was also designed by Mr. Patterson.

The boats are heavily constructed with frames of oak, $1\frac{1}{2}$ by $1\frac{3}{4}$ inches, with $\frac{7}{8}$ -inch cedar planking. The hulls are ceiled with $\frac{3}{8}$ -inch cypress, and the cabin tops are of 9-16-inch cypress covered with heavy canvas.

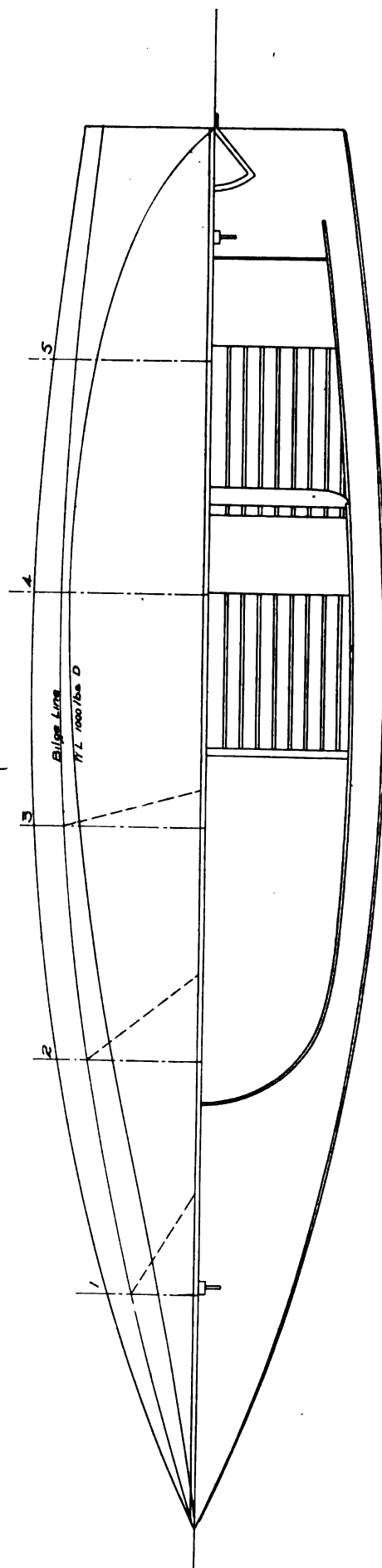
One of the boats is wholly finished in oak, while the other is finished in mahogany, and one will be driven by an 18-25-h.p. Sterling engine, while the other will have a 10-12-h.p. Bridgeport.

The general dimensions are:

Length o. a	31 feet 0 inches
Breadth	8 " 0 "
Draught	2 " 8 "



Note - Deck line on Stations 1, 2, 3, 4, 5 indicating the bottom plank angles



Eighteen-Foot V-Bottom Runabout. Designed by Wm. H. Hand, Jr.

18-FOOT "V-BOTTOM" RUNABOUT

THE accompanying cut shows the lines of an attractive "V-bottom" runabout designed by William H. Hand, Jr., of New Bedford, Mass., and now being built for H. H. Langsdorf, M.D. This little boat is very similar to others of this type which have shown excellent speed with comparatively low powers. The construction system is of the simple type devised by the designer, which eliminates all bending of frames and practically all difficult boat-building work. All parts of the main framing run fore and aft while the bottom planking is put on crossways or athwartships. The side planking and decking is placed in the usual manner. While extremely simple in all details, the resulting hulls are remarkably rigid. All frame parts are of white oak. The planking is of Virginia cedar 7-16 inch in thickness, fastened with brass screws.

These little boats give excellent account of themselves in rough water, and, due to the form of the underbody the designer states that they never pound. They have unusual stability and will carry an overload with less difficulty than the average boat. The boat here shown will be used for fishing trips on lakes, ponds and rivers, and will be shipped by rail from one fishing ground to another. The engine will be a three-cylinder Erd of 15-h.p. and the guaranteed speed will be at least 20 miles per hour when carrying one passenger.

The dimensions are:

Length o. a.	18 feet 0 inches
Breadth	4 " 6 "
Draught of hull	0 " 11 "

30-FOOT POWER CRUISER

THE 30-foot power cruiser, shown on the following pages, is from the boards of Bowes & Mower, and was designed by them to meet the demand for a small power cruiser with sufficient accommodations to accommodate a party of four on short cruises. Two cabin plans are shown, and it will be noted that each plan provides four full-length bunks, together with complete plumbing and galley.

The designers state that up to the present writing, thirty-four boats have been built from these plans, which certainly speaks well for the design. The boats built were equipped with single and in some few cases with two-cylinder engines of from 8 to 10-h.p. of the following makes, Bridgeport, Oriole, Mianus and Hall, all of which have given perfect satisfaction so far as the designers know. They recommend that a single-cylinder engine be used, both on account of simplicity and economy of space. The scantlings are quite heavy for a boat of this size, and boats built from the plans will stand the hardest kind of usage. Last Summer one of the boats got on Barnegat Bar and pounded over the shoals without any material damage. The frames are 1¼ inches square, spaced on 12 inches centers, planking of ¾-inch white cedar, with keel of 4 by 5-inch white oak, with the balance of the construction in proportion.

Accurate speed results were obtained on only one of the boats of which we have any knowledge, and the designers state that she made 8½ miles per hour with an engine developing 9-h.p. The prices on the boats vary from \$700 to \$875.

Stations	B	2	3	4	5	6	7	8	9	10	T
Raised Deck	6-7-0	6-6-2	6-5-4	6-4-6	6-4-0	6-3-3	6-2-5	5-6-4	5-0-6	4-11-4	
Sheer	5-10-2	5-7-2	5-4-6	5-2-3	5-0-0	4-10-1	4-8-3	4-7-1	4-6-5	4-7-0	4-8-5
Sta. 2' 9" out			4-2-1	2-3-0	1-8-7	1-6-6	1-6-4	1-8-7	2-0-6	2-6-6	
Sta. 1' 9" out		5-0-0	2-1-1	1-6-0	1-3-2	1-2-3	1-2-6	1-5-2	1-9-3	2-1-6	2-5-1
Sta. 9" out		1-10-7	1-3-4	1-1-4	0-11-7	0-11-1	1-0-2	1-3-2	1-7-6	2-0-0	2-3-0
Rubber		1-2-0	1-0-6	0-11-4	0-10-2	0-9-3	0-10-4	1-2-2	1-7-2	1-11-5	2-2-3
Keel Bottom		0-11-4	STRAIGHT						0-1-4		
Raised Deck		2-4-7	3-5-0	3-11-1	4-1-7	4-2-6	4-2-2				
Sheer		1-11-4	3-1-6	3-9-4	4-1-0	4-2-4	4-2-2	4-0-4	3-8-3	3-1-6	2-5-4
W.L. No. 1		1-4-6	2-7-4	3-8-6	3-1-4	4-2-0					
" " 2		1-2-1	2-4-0	3-2-4	3-9-4	4-0-7	4-1-3	3-11-2	3-6-5	2-11-5	2-4-7
" " 3		0-10-5	1-10-4	2-8-5	3-4-2	3-8-3	3-9-4	3-6-5	3-0-4	2-0-5	0-5-1
" " 4		0-7-7	1-4-4	2-1-2	2-8-5	3-1-2	3-2-2	2-8-3	1-2-7		
" " 5		0-2-7	0-7-1	1-0-2	1-5-4	1-9-2	1-8-0	0-4-1			
Diag. A		2-0-0	3-0-1	3-5-3	3-8-0	3-9-3	3-9-1	3-6-5	3-2-6	2-10-1	2-6-5
" B		1-11-0	3-1-6	3-11-5	4-5-6	4-9-3	4-10-3	4-8-0	4-3-6	3-10-0	3-2-2
" C		1-9-2	2-11-7	3-9-2	4-2-7	4-5-7	4-6-3	4-4-1	4-0-0	3-5-0	2-8-4

Stations spaced 3'0" apart. Base Line 2'2½" below L.W.L.

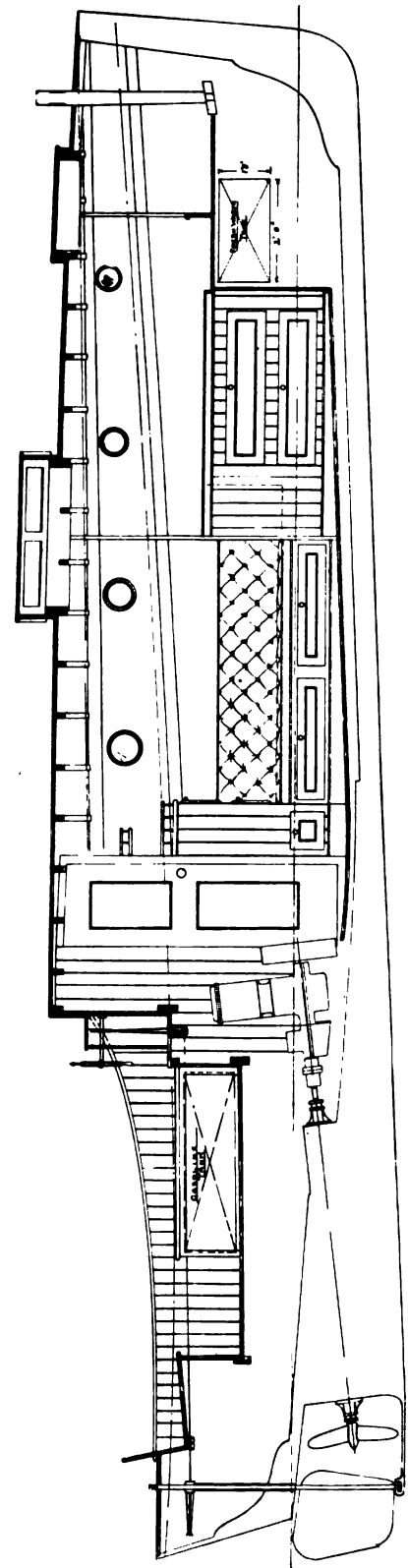
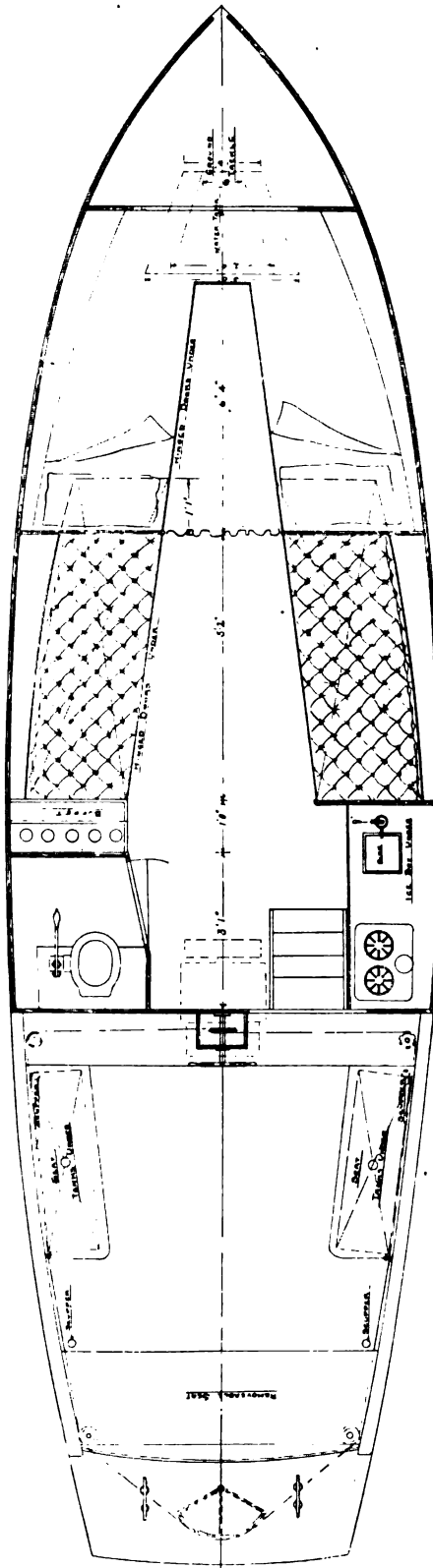
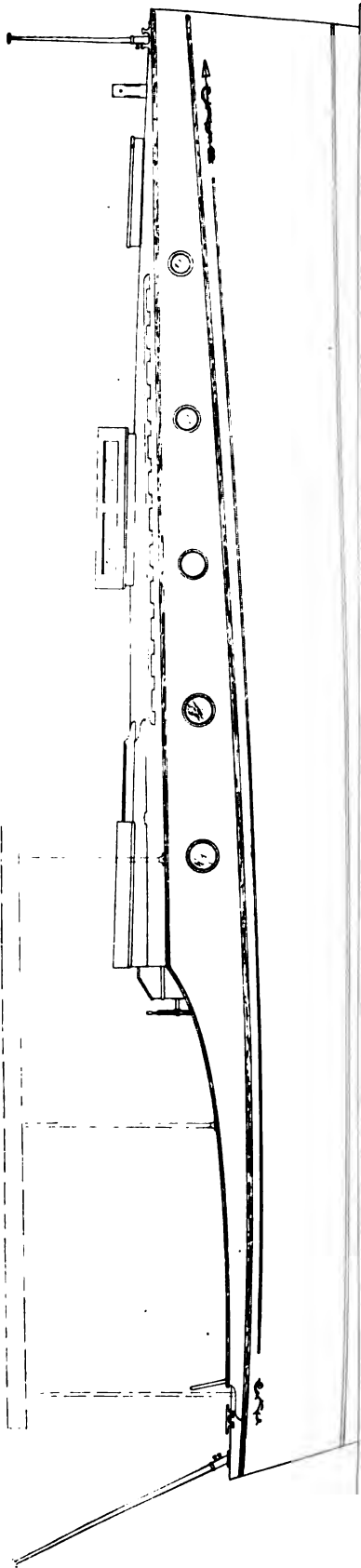
Waterlines Nos 1, 2 & 3 spaced 9" apart.

" " 3, 4 & 5	" 6 "
Diagonal A intersects W.L. No 5 2'2" out.	
" B " " No 2 2'9" "	
" C " " No 2 3'6" "	

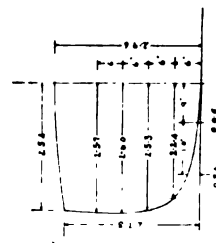
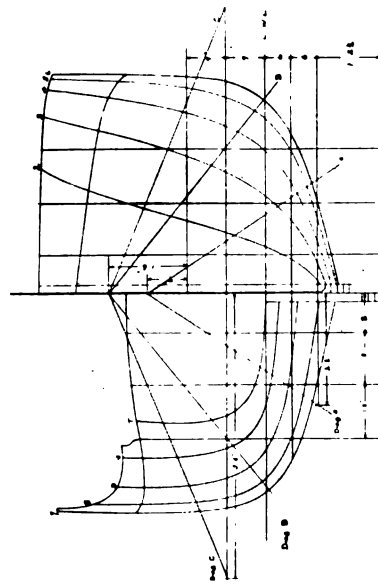
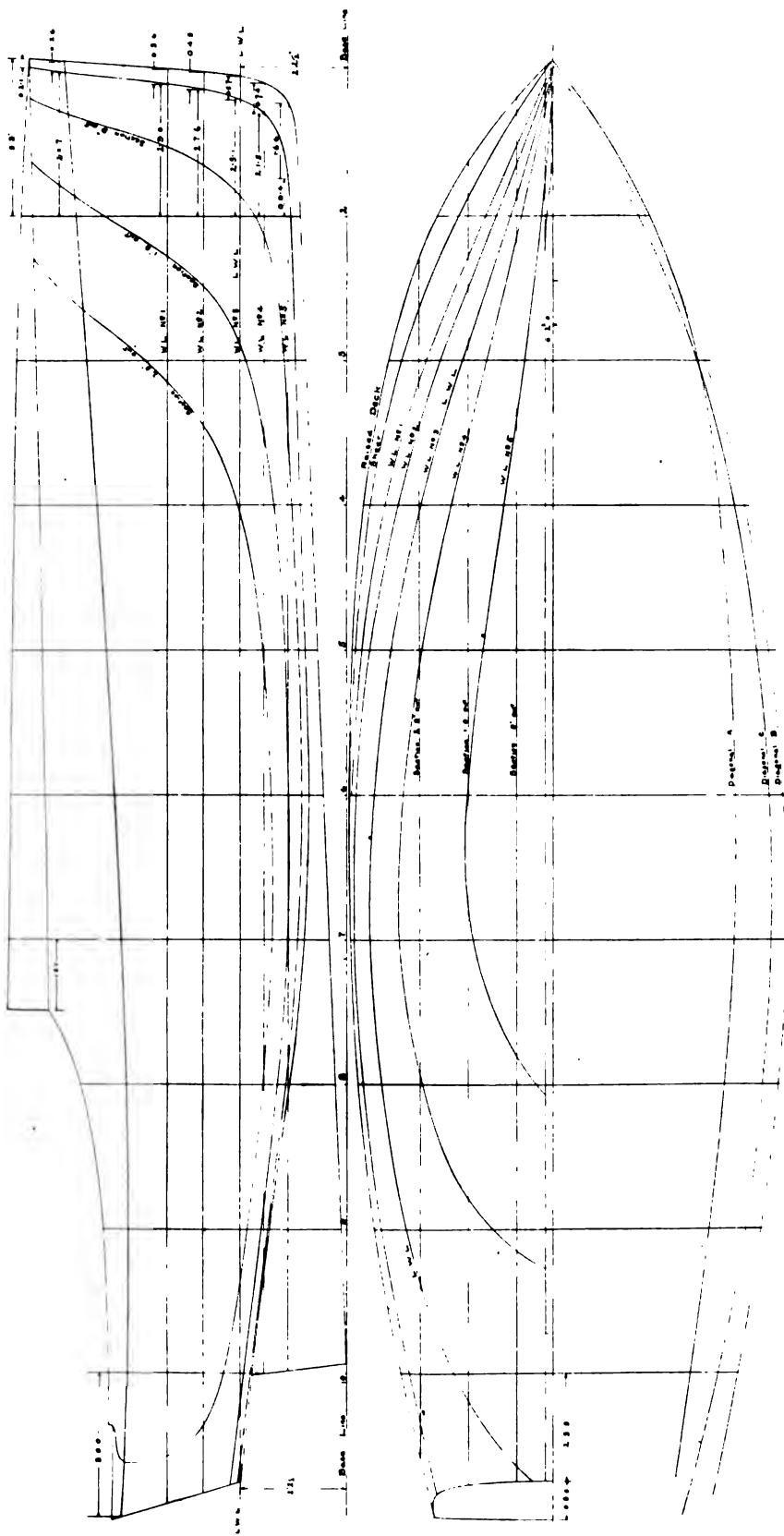
The general dimensions are as follows:

Length o. a.	30 feet 0 inches
Length w. l.	29 " 0 "
Breadth	8 " 5 "
Draught	2 " 3 "

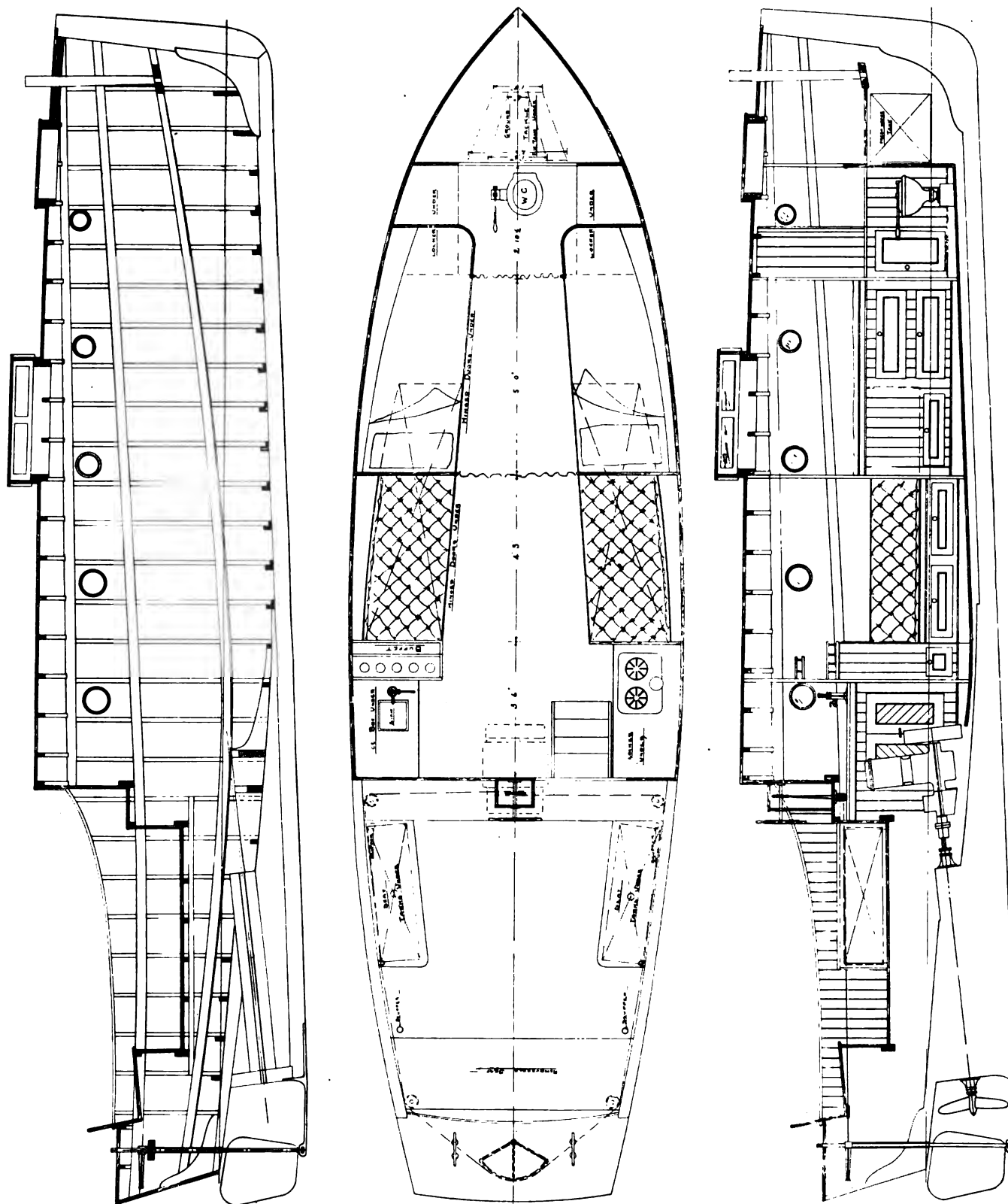
Table of Offsets of Bowes & Mower 30-Footer. Dimensions in Feet, Inches and Eighths, to Outside of Planking



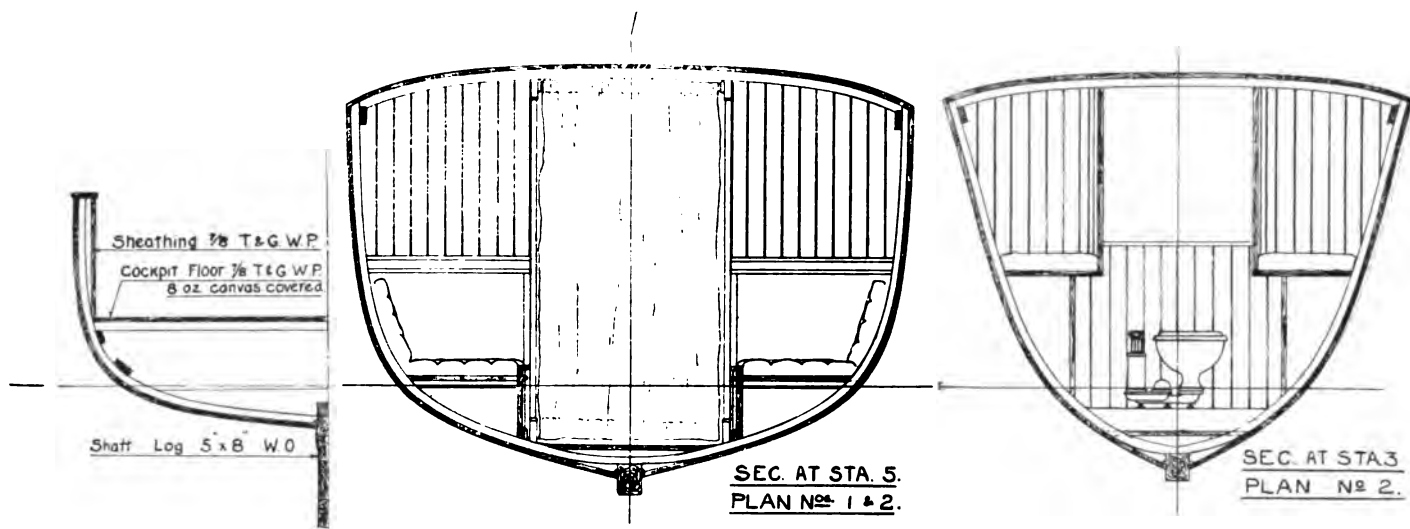
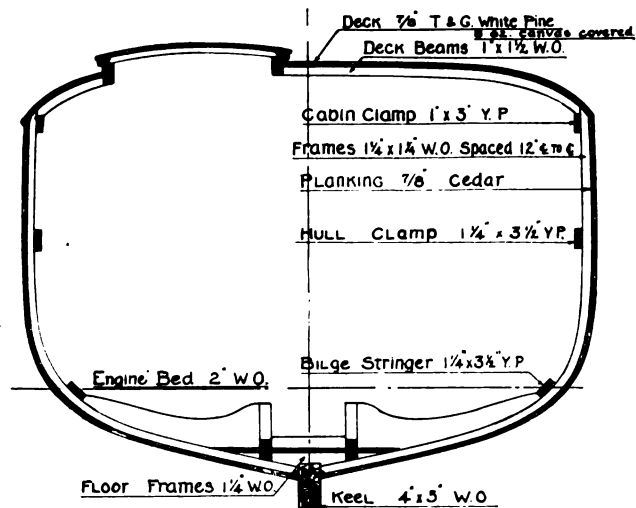
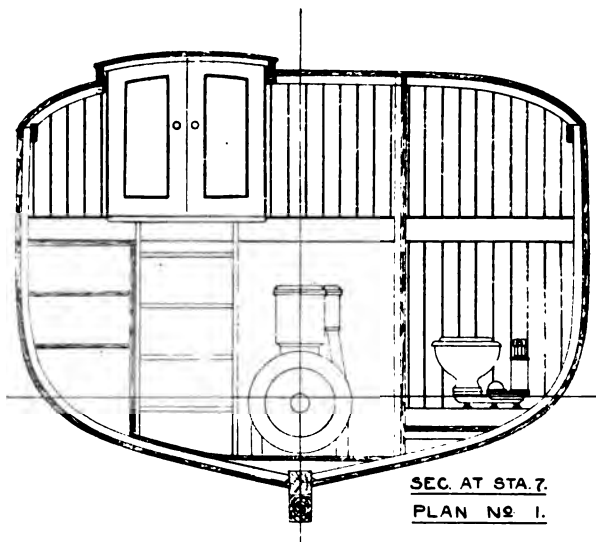
Outboard Profile and Accommodation Plan No 1 of Thirty-Foot Power Cruiser



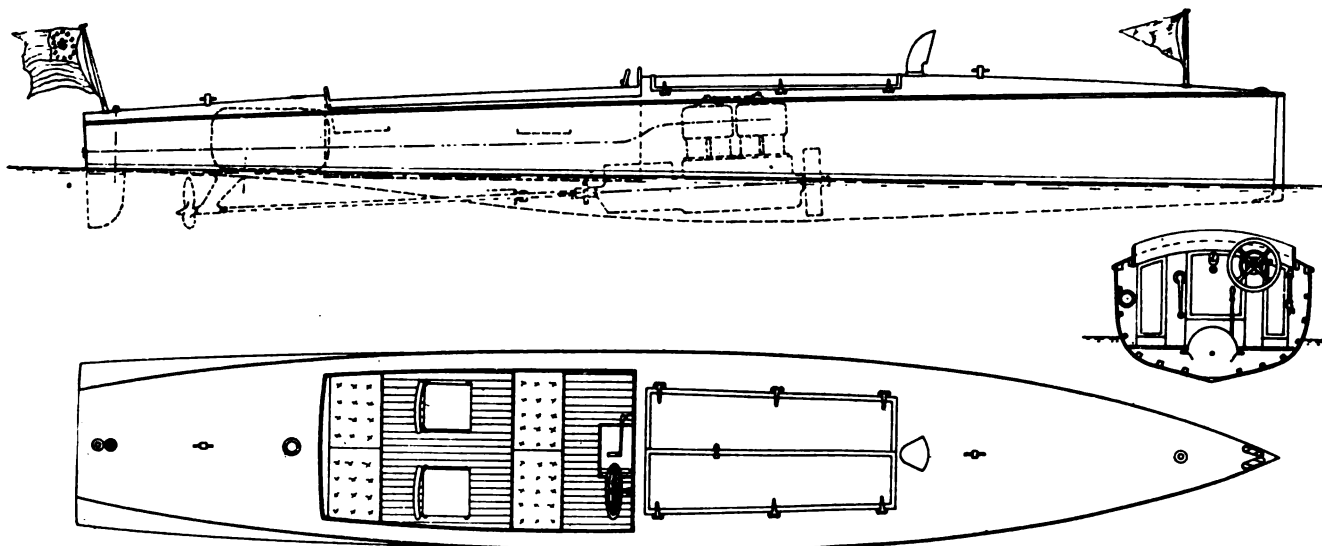
Lines of Thirty-Foot Power Cruiser. Designed by Bowes & Mower



Construction Plan and Accommodation Plan No. 2 of Thirty-Foot Power Cruiser



Sections of Thirty-Foot Power Cruiser. Designed by Bowes & Mower, Philadelphia, Pa.



Twenty-Six-Foot Runabout. Designed by James Whittlesey Hussey, for Mr. George E. Maltby, of Jamestown, N. Y. Description on Following Page

TWENTY-SIX-FOOT RUNABOUT

THE profile and deck plans on previous page show a 26-foot runabout designed for Mr. George E. Maltby, of Jamestown, N. Y., by James Whittlesey Hussey, of Philadelphia, for use on Lake Chautauqua, N. Y.

The lines and construction have been worked out to give the best speed possible in a gentleman's runabout, without sacrificing stability, comfort, dryness, or ease of handling. The sheer has been hogged to reduce weight at the ends and to give unobstructed steering view when at top speed.

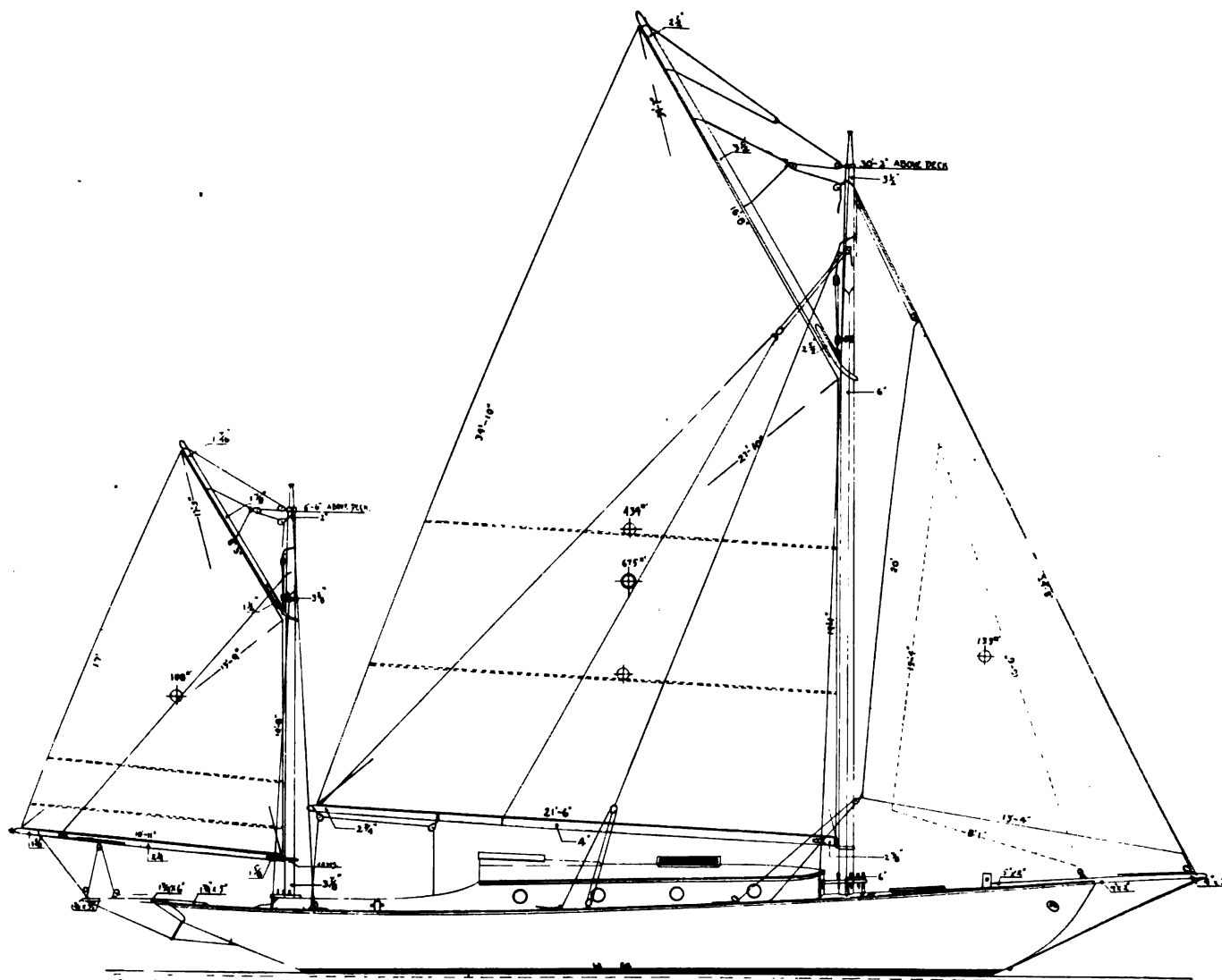
The appearance will be noteworthy in that she will be planked and decked with mahogany, finished bright, all planking being in full lengths from stem to transom, and all fittings, controls, exposed tanks, etc., will be nickel-plated. The cockpit will show a panel bulkhead, checkered aluminum, auto-type floor forward of control seat, and inlaid white pine and mahogany floor aft to lazy-back seat. No moving parts show in the cockpit, which seats four on the thwarts and two in wicker armchairs of special design. All seats will be upholstered with dark green leather cushions of life-preserver type. Full auto controls are to be fitted, together with rear-starting device.

The construction is on the longitudinal seam strap system, with web frames and light bent frames to hold the $\frac{1}{4}$ -inch planking in form. This produces a light and at the same time, rigid and water-tight hull. The stability of this design is exceptional, as the engine and fuel weights are carried very low, pressure being used on the gasoline tanks. The deep rudder and low center of gravity will make turning at full speed with an inboard heel possible.

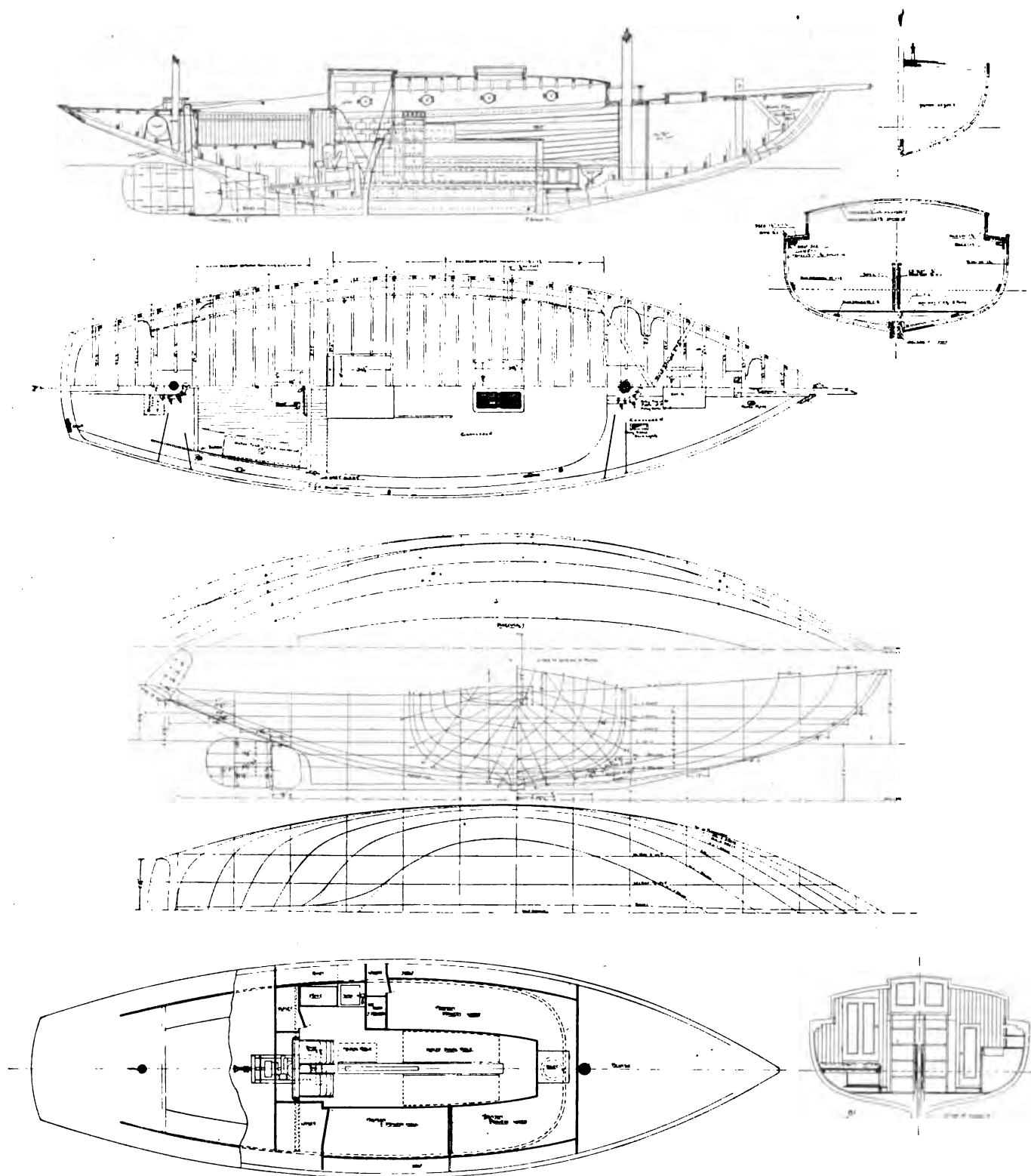
Designed for a six-cylinder, $4\frac{3}{8}$ by $5\frac{1}{2}$ -inch engine, she will be equipped this season with a Sterling 18-25-h.p. engine, and is expected to be very speedy even with the small power, and an effective racer, due to her low rating.

TWENTY-EIGHT-FOOT AUX. YAWL

THIS centerboard auxiliary yawl was designed for John Mactaggart, of Brisbane, Queensland, who desired a heavy weather yawl of only 30 inches draught to navigate the local shoal waters. The engine, a 12-h.p. Lamb, is located as far aft as possible, the run of the boat being designed to accommodate the engine, which should drive the boat at a speed of about 8 miles.



Twenty-Eight-Foot Auxiliary Yawl. Designed for John Mactaggart, of Brisbane, Queensland, Australia, by Norman L. Skene, Boston, Mass.



Construction Plans, Lines and Accommodation Plan of Twenty-Eight-Foot Auxiliary Yawl

The form of the hull is powerful and with the very moderate sail area makes the boat well adapted to a locality where strong winds prevail. The cabin, while plainly finished, gives comfortable living accommodations for three on a cruise.

Although the power-boat run has undoubtedly first call, there are and always will be many cruising yachts-

men unwilling to give up sails entirely, and to such this able little auxiliary yawl should appeal.

General dimensions are as follows:

Length o. a.	39 feet 0 inches
Length w. l.	28 " 0 "
Breadth	11 " 5 "
Draught	2 " 6 "

NEMAHA

THE accompanying cuts show the large cruising power yacht Nemaha, from plans and specifications by Messrs. Cox & Stevens, which should, when completed, attract considerable attention, by reason of her novel design, great amount of accommodation available for the owner and his guests, and the simplicity of the internal arrangements. This vessel is being built by the Nilson Shipbuilding Company, of Baltimore, Md., and will be delivered to her owner, Mr. Huston Wyeth, who is a Western yachtsman and a member of the New York Y. C., in time to start on an extended cruise in the South in the latter part of the coming Summer.

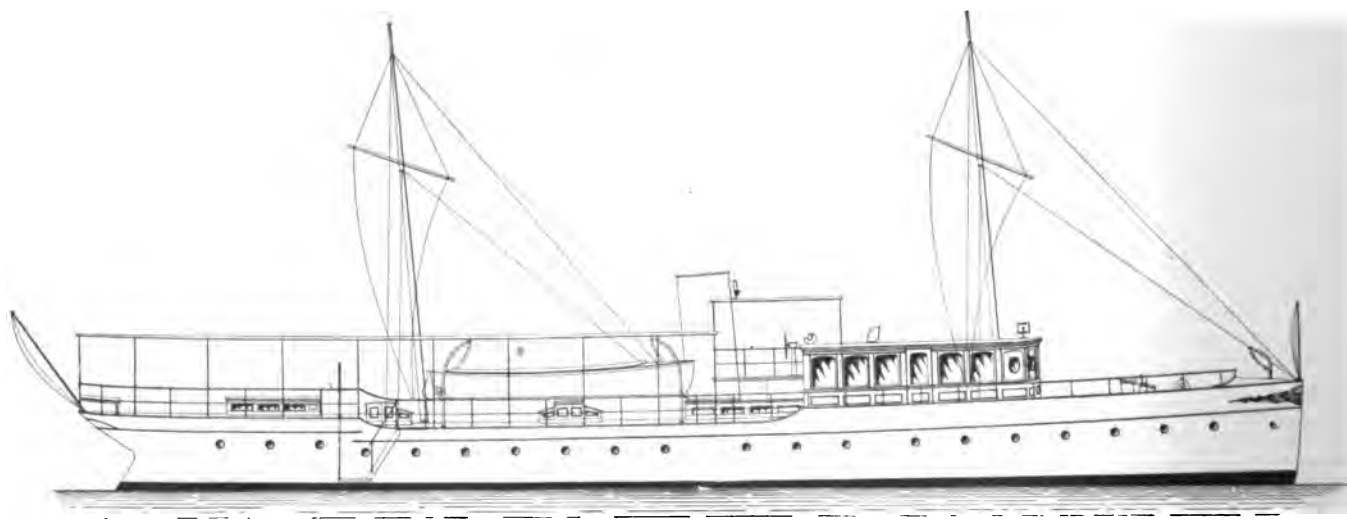
The dimensions of this vessel are, length over all, 98 feet, breadth 16 feet, draught 4 feet, the intention being to have the maximum size of vessel to pass through the locks and under the bridges of the Erie Canal, the height of the house being also arranged with this in view. In type, the vessel is a small steamer, being flush deck throughout, the freeboard forward and aft being raised as in the case of Viator and other similar vessels by the same designers. With the plumb stem, full deck line forward, associated with flaring sections, the elliptical stern aft, permitting also an extremely full deck line at this point, and working down into the steamship type of underbody, thus getting the greatest possible water-line length for over-all length,—and long low deckhouse forward, large ventilating stack containing mufflers, and two polemasts on which sails can be set if desired, this craft will present a very workmanlike and pleasing appearance.

The motive power consists of two six-cylinder, 100-h.p. Standard engines, of the air-starting, reversible type, contained in the central compartment, separated from the rest of the vessel by water-tight steel bulkheads, this compartment also containing the gasoline tanks, which are of copper, three in number, of a total capacity of 1,500 gallons, and large electric generating set, driven by an independent gasoline motor, this set being combined with an air compressor and fire and bilge pump. The engine room compartment is large and roomy, well ventilated, and contains the bunks and lockers of the engineer and his assistant, they having their own washing arrangements and toilet in this space. The designers, having ap-

preciated from their former experience the absolute necessity of having perfect ventilation and entire accessibility for repair and inspection of the tanks and machinery, have paid special attention to this feature. With this in view, a trunk hatch has been worked over the engine space, extending from the after end of the deckhouse, this trunk having ventilating windows on all sides, thus providing for a supply of fresh air and light, the ventilating stack landing on the after part of the roof of this trunk. The stack base is attached to the top of the trunk, which is arranged so as to be portable for its entire length, and when removed with the stack, leaves an opening of sufficient size to permit either engine to be hoisted out easily, or any one of the three gasoline tanks to be removed for survey or repair.

The hull of the vessel is to be built of wood, this being more suitable than steel for Southern cruising, where this craft will for the most part be used. The keel and the keelson, which are unusually heavy, are of white oak, as are also the timbers, which are double sawn and of very heavy section, placed closely together, and providing, with the five water-tight bulkheads subdividing the ship,—a very rigid transverse construction. The planking will be of selected long-leaf yellow pine, 2-inch stock, and from the water-line down the vessel will be sheathed with copper for protection against worms. The deck will be of carefully selected white pine, in as long lengths as possible, the seams payed with marine glue, and forming a very pleasing contrast with the teak plank-sheer, hatches, companionways and hand-rail. The outside of the deckhouse will also be of selected teak, handsomely paneled, and the boats, of which there are two, one a 21-foot launch, the other a 16-foot dinghy, will be of teak trim, their planking being white cedar. In accordance with present practice, the deck fittings will be plain and of galvanized iron, with the exception of the rail and stanchions around the bridge, which will be of polished brass. The navigating bridge, as stated, extends across the ship just abaft of deckhouse, and is in the form of a teak grating with awning overhead, the space between the bridge and the trunk over the engine room being utilized for gravity tanks for the sanitary freshwater system.

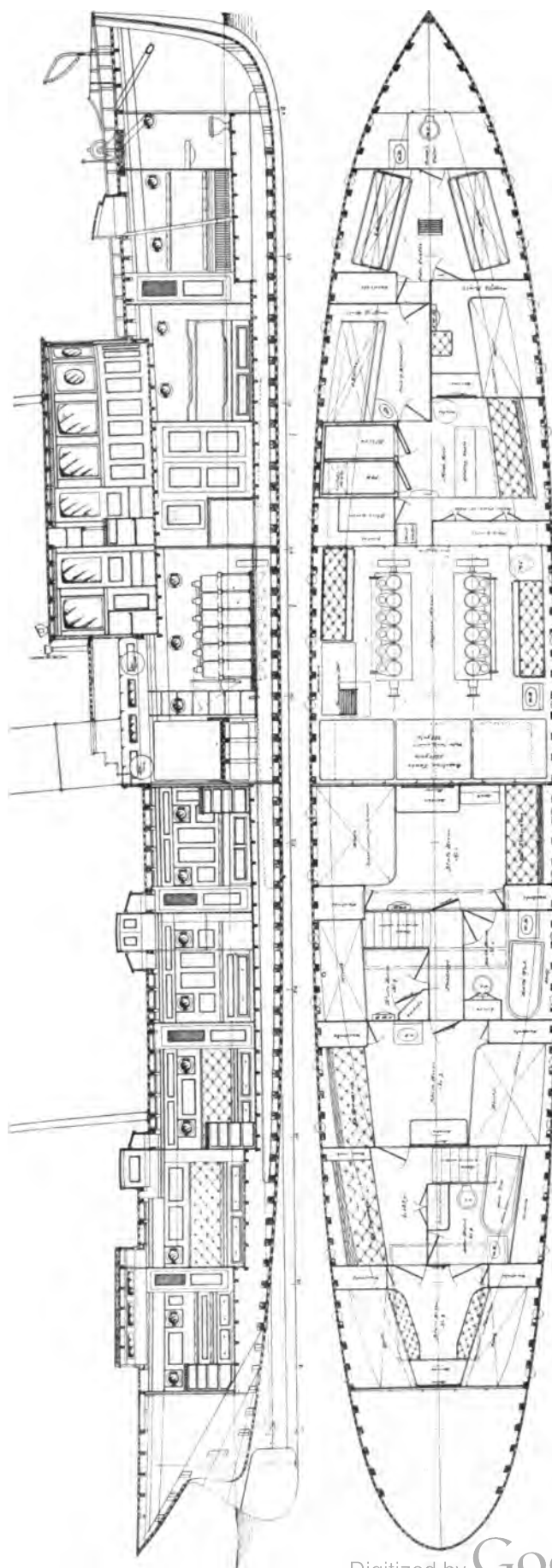
The accommodation for the owner and guests has



Nemaha, 98 Ft. O. A. Designed by Cox & Stevens, and Building by The Nilson Shipbuilding Co. for Mr. Huston Wyeth, of the N. Y. Y. C.

all been arranged so as to be abaft of the engine space, which, however, is not so far forward of the center of length as to interfere with placing the fuel supply over the center of buoyancy of the vessel,—a most desirable arrangement, obviating, as it does, change of trim with change in fuel supply, and being further desirable by reason of the increased seaworthiness, resulting from such an arrangement as compared with vessels having their machinery or fuel at the ends of the boat.

In order to use to advantage the large amount of space available for quarters aft, the designers decided upon the use of two companionways from the deck to these quarters. One of these companionways is on the starboard side, abreast the companion ladder, and leads directly down into a lobby on the port side of the ship, which is attractively arranged with a full length transom sofa that can be used as a comfortable berth, if desired; this lobby also having a gun rack, book shelf and large hanging locker, making it a useful part of the ship. Opposite this lobby on the starboard side, and partly under the stairs, is a large bathroom, with tiled floor, having in it a 5-foot 6-inch porcelain tub, large porcelain lavatory, toilet, medicine locker, all of the most modern type. The plumbing system has been so arranged that in this bathroom, as in the rest of the ship, both hot and cold, fresh, and cold salt water are supplied from the gravity tanks on deck. This bathroom has one door opening into the lobby, and in the after end another door opening into the after stateroom, this stateroom also having a door to the lobby. This after stateroom has been arranged to take care of two guests with perfect comfort, having on each side a full-length built-in berth with drawers underneath for stowage of clothes, between the berths at the after end there being arranged a bureau with plate-glass mirror, and at the forward end of each berth there is provided a large hanging wardrobe. On the forward bulkhead of this stateroom, between the two doors, a full-length plate-glass mirror is arranged, which is a most attractive feature. The finish of this room, which is the same as in the lobby, and in fact in all quarters below aft, is of Colonial style, the bureaus, doors, berth fronts, and all articles of furniture being of mahogany; the sides of the vessel, bulkheads, and deck overhead being handsomely paneled in white pine, painted white. This is the most popular finish at the present time, providing as it does, an attractive appearance and making the quarters light. From the lobby just mentioned, at the foot of the after stairs, a door communicates at the forward end with another stateroom, the full width of the vessel and 9 feet in length. This stateroom has on the starboard side a 4-foot built-in berth, with drawers underneath, and a hanging wardrobe. On the port side is an extension transom, which can be used as a berth, if desired, or otherwise as a sofa, this transom having stowage space underneath, and a book shelf over it. Forward of this transom is another large hanging wardrobe. Against the after bulkhead of this stateroom is fastened a large bureau with plate-glass mirror above the same, this bureau having, as have all the bureaus in the vessel, a sheet of plate glass placed on its top, so that the polished surface will not be marred by the toilet articles. On the forward bulkhead of this room has been arranged a full-length mirror, as in the case of the after stateroom. This stateroom has in addition to the door opening into the lobby, another door on the forward bulkhead opening into a passage. This passage at its forward end opens into another 9-foot stateroom, the full width of the



Accommodation Plan of Ninety-Eight-Foot Power Cruiser

vessel, similar in arrangement to the other large stateroom, and has on its starboard side a large bathroom, arranged in a similar manner to the bathroom already described; opposite this bathroom, port side, being a single stateroom, with built-in berth and drawers underneath, and between this room and the double stateroom just described, is arranged the second companionway already referred to, which starts from the passage and lands on deck on the port side.

The dining room, which is contained in the deckhouse as is customary, is 12 feet in fore-and-aft length in the clear, is of ample breadth, has large sideboard and serving table in addition to a round extension dining table, and communicates with a combined galley and pantry at its after end, it having been thought advisable on account of the heat in Southern waters to keep the galley on deck. The finish of this room is mahogany, handsomely paneled not only in the sides, but overhead and between the beams.

Below decks, forward of the engine room, comfortable quarters have been laid out for the crew, and ample storage space has been provided for fresh water and regular stores. The galley communicates with this portion of the vessel by a dumb-waiter and also a hatch, through which provisions can be passed down below to the storerooms. Part of this space below has been given up to an ice-box of very large capacity, opposite this being the crew's messroom. The captain has a separate stateroom with bureau, seat, wash-stand and wardrobe, the cook and steward have another stateroom by themselves, while the forecabin proper contains berths for four men, as well as a large wardrobe and locker for their clothes.

GREAT LAKES CRUISER

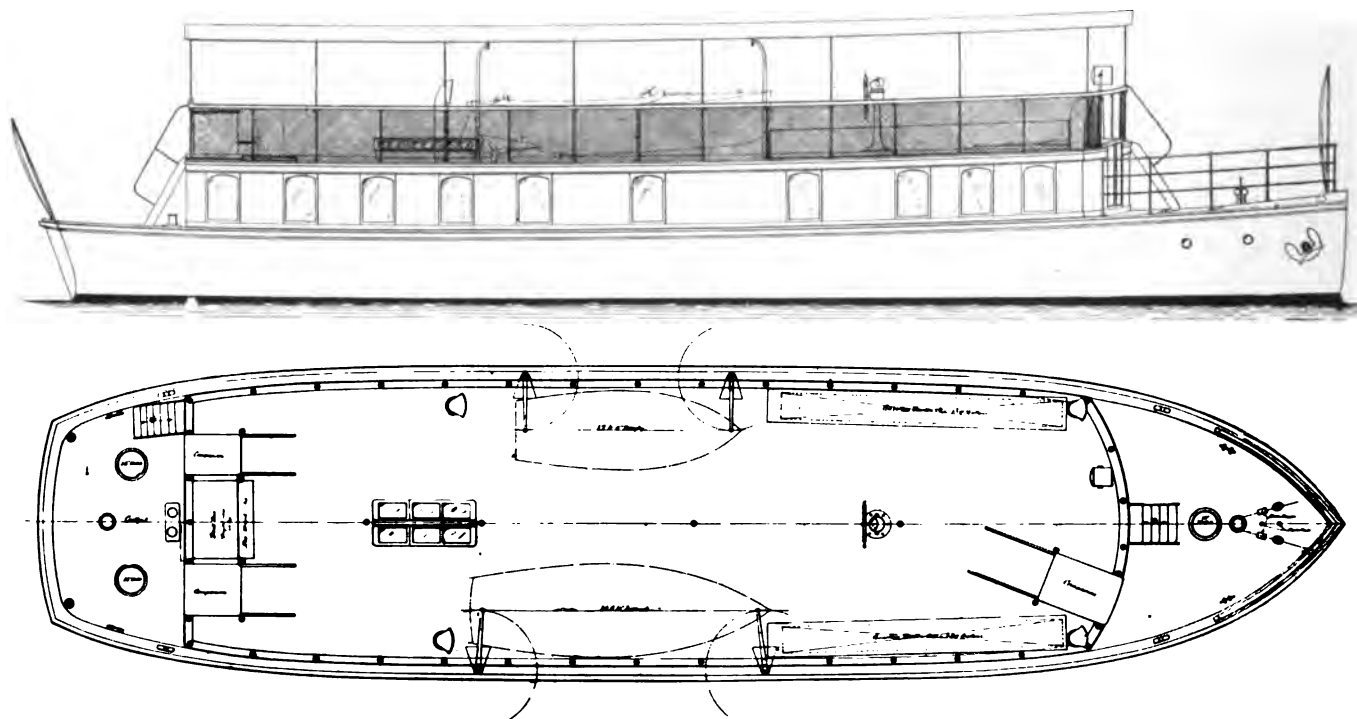
THE Great Lakes fleet will receive a valuable addition in the shoal draught power cruiser now building for Mr. Egbert H. Gold, of Chicago, Ill., from designs of Gielow & Orr.

"The draught of the vessel has been restricted to a minimum as the owner desires to go into shoal waters where there is excellent gunning; however, her lines have been so modeled that she will possess good seagoing qualities as well. This combination has necessitated the introduction of two tunnels, in which the propellers work, so arranged that, in case of the boat grounding, the propellers will escape injury.

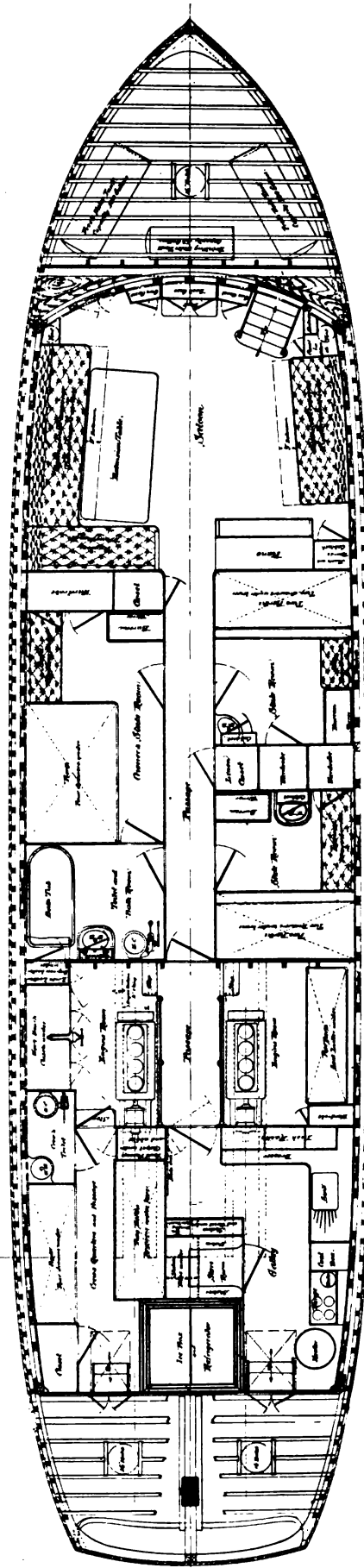
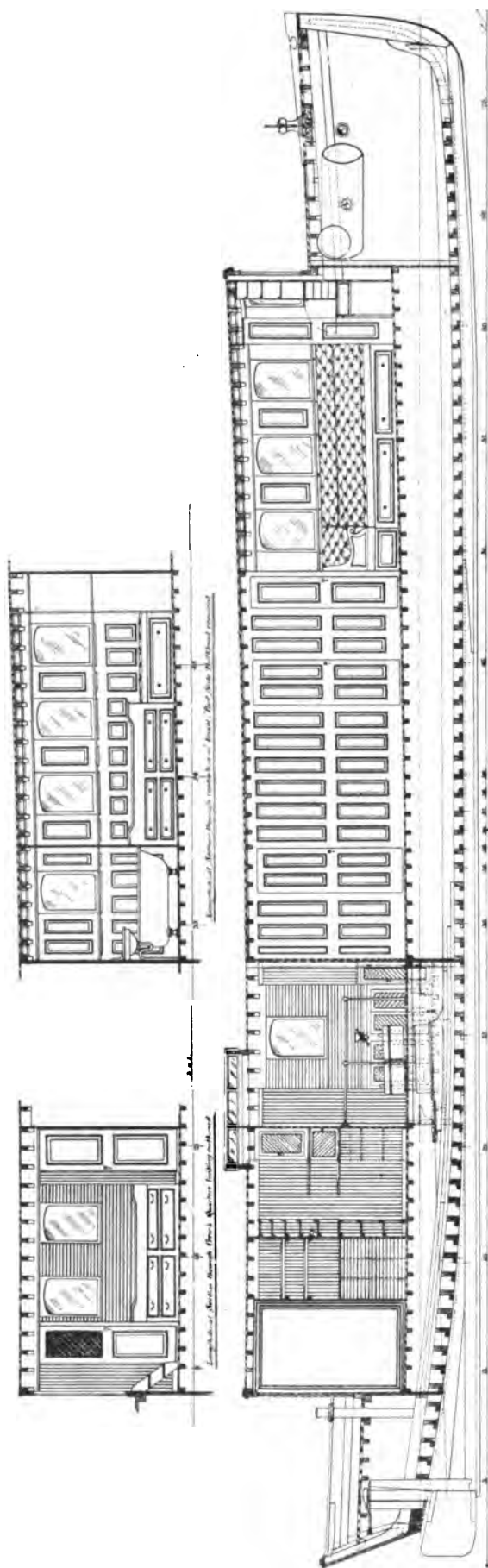
"The lines show an easy form, with the floor carried well forward and aft, indicating seaworthiness as well as liberal interior accommodations. Exceptional structural strength has been obtained by carrying up the sides of the hull for a distance of 50 feet fore and aft amidships, thus forming a flush deck vessel with nearly 7 feet clear headroom. Instead of circular air-ports rectangular windows are provided which, together with skylights and ventilating cowls, will give most excellent light and ventilation.

"As the boat is intended for long cruises the accommodations have been arranged with this feature especially in view, and liberal living quarters with ample closet and locker space have been provided. The main cabin, or saloon, is at forward end, 13 feet long and extending full width of vessel, fitted with divans, desk, piano, music cabinet, gun cases, etc. The space immediately aft of saloon, 17 feet fore and aft and full width of vessel, will be taken up by owner's stateroom, bathroom, and two guests' staterooms, fitted with berths, divans, bureaus, wash-basins with hot and cold water and open plumbing complete. The next 19 feet of boat will contain engine room, galley, and quarters for crew: all furnished and fitted in the latest and most approved manner. The berths, bureaus and divans in staterooms and the main saloon will be finished in polished mahogany, and the balance of the interior will be finished in white enamel. The skylights and deck fixtures will all be of mahogany finished bright.

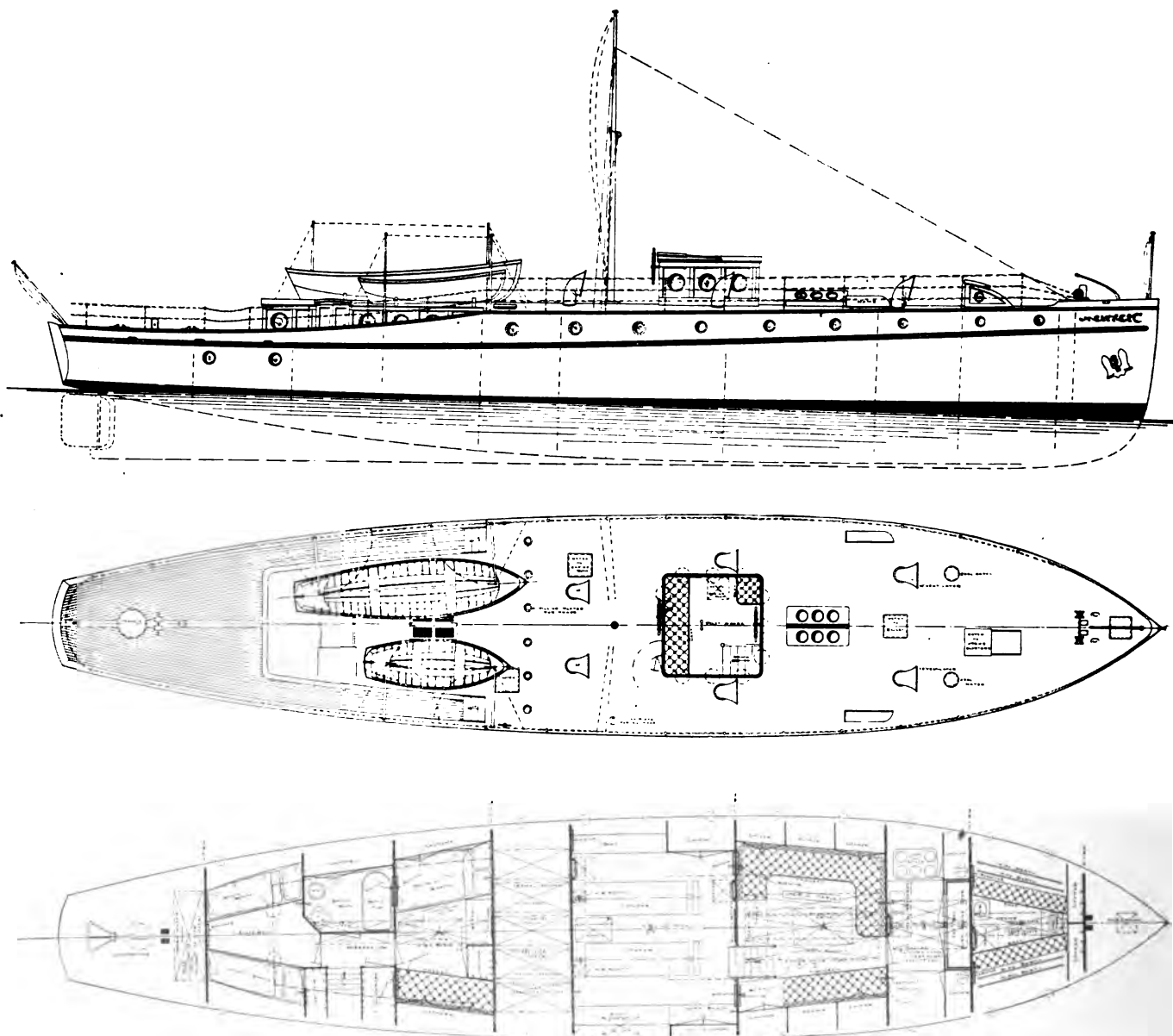
"The propelling machinery will consist of a pair of four-cylinder Standard engines, developing 40-h.p., with



Sixty-Nine-Foot Great Lakes Cruiser. Designed by Gielow & Orr, for Mr. Egbert H. Gold, of Chicago, Ill.



Accommodation Plans of Sixty-Nine-Foot Great Lakes Cruiser



Seventy-Five-Foot Cruiser. Designed by Morris M. Whitaker, New York City

Tobin bronze shafts and manganese bronze propellers. Gasolene tanks will be forward on main deck with gravity feed to engines. Water tanks are cylindrical and fitted to receive air pressure so as to supply running water throughout the boat. The vessel will be steam-heated and lighted by electricity.

General dimensions are as follows:

Length o. a.	69	feet	8	inches
Length w. l.	67	"	7	"
Breadth	16	"	10	"
Draught	2	"	8	"

SEVENTY-FIVE-FOOT CRUISER

THE power cruiser shown in the above plans was designed by Morris M. Whitaker for a gentleman in Kerosha, Wis., who proposes to use the boat as an offshore cruiser. The craft is 75 feet over all with a breadth of 15 feet, and the lines, according to the designer, were laid down with a view to providing a boat

that would be able to stay at sea under any conditions. The gasolene supply, including reserve tanks under the flooring, will be about 1,800 gallons and her water supply 500 gallons. The engines will be two 50-h.p. Ralacos, with separate engine for electric lighting plant, bilge pump, and air-pump. The boat will be steam-heated and will be of very heavy construction, covered with Munz metal for use in the West Indies, and the sides for a distance above and below the water-line will be sheathed with extra heavy hard brass so she can be used in the late Fall and early Spring in Northern waters, where she is likely to encounter ice. There will be several watertight bulkheads, each with separate suction to the bilge pump, and the ordinary joiner bulkheads will be made double with felt between, to insure noiselessness. The frames will be (steel diagonal) strapped, as will the deck, and the finish throughout below decks will be in white enamel. The pilothouse and extension under the raised deck will be finished in teak, no mahogany being used in the boat.

FITTING-OUT TIME



MEN may fly, or drive racing cars, or go hunting in the Arctic, but for me, give me a boat! The pleasure in the mere fitting out of a sailing craft is one of the pure joys of sport. It is better even than hearing the water gurgling and bubbling under the bow in a steady Summer breeze; better because all the while you are working with your hands on the boat, your mind and heart are in the work, and anticipation is saying to you: "Hurry up there! Hurry up! Get ready! The hours are slipping by, and you're likely to be late. You'll miss something if you're not at the line with the rest of the fellows! Work faster, or the fun will be half over before you hoist your sail."

So you work like a man on a wager, and the joy of your little adventure swells in your breast—or wherever it is that joy keeps itself—and you wouldn't swap places with a hero. In fact, you are having a lot more fun than most heroes, and the fever of excitement is in your veins, and actually makes you prickle up and down your spine like an electric thrill. It must have been some such excitement as that, only on a grand scale, that started the old voyagers a-sailing. They couldn't help going. They hurried to get ready, to be afloat, just as you are hurrying on that old tub of a boat. You are a brother of Vasco De Gama, and Prince Henry the Navigator, and all that noble company of old salts who are watching you with approval this minute from Davy Jones's locker. The spirit that actuates you as you scrape paint and putty seams on your boat's bottom is the same that sent Columbus sailing into the unknown seas; that spurred the unlucky Cabot to shape his course into the cold Atlantic mists for the last time; that inspired Magellan to dare the frowning cavern of the wild straits; that burned in the breast of

".....Stout Cortez when with eagle eyes
He stared at the Pacific, and all his men
Look'd at each other with a wild surmise
Silent, upon a peak in Darien."

Perhaps you think—and you do a lot of thinking as the paint-burner buzzes and your knife turns off the flakes of old lead and oil from the boat's weathered sides—that a comparison like this is high-flown. "Foolishness," say you, "to bracket Columbus and the man who plays with a boat in the twentieth century."

Well, maybe. Anyhow, there is something in that same work of fitting out your little ship which makes the hours seem like minutes, and the days like abbreviated hours. This perhaps is because you are stealing some of those hours from business. All the better, like kisses, are they for being stolen! By this token, say I, as I labor

on my boat in the shipyard, every man ought to be a thief now and then. It is your clerkly fellows, following a dull and boatless routine, who are to be pitied—and watched.

Assume that you are forty or thereabouts, and inclined to fat, as I may be; that the bloom is off the peach, so to speak, and mere novelty no longer charms, in the usual round of worldly affairs. Assume that you have tried various sports, most of them half-heartedly; that you have long known the ways of boats; have been before now won away from them into an apostasy of shameless brotherhood with golf and gasoline; that you have come back to your old love, and to work, and old clothes, and tar, oakum and paint, that together are like a feast of fatted veal to the prodigal.

Of course, you must first have your boat. Any old boat will do; up to a certain point perhaps the older the better. An old boat puts you on trial. If you have any confidence in yourself, you can make it tight and safe, and capable, after you get it afloat, of giving your friends, as well as yourself, much healthful pleasure. Thus the boat is worth its cost to you for the good it does your self-esteem. Believe me, the man who buys a new boat, and has all the work of fitting it out done by the common or garden yacht-sailor or yard-hand doesn't get into touch with his sport at all. His husky hirelings are pretty sure to hold him secretly in contempt, and the boat-owner misses completely the greatest prize a sport bestows on any man, to wit,—confidence that he knows every part of it, and can master it with his bare hands.

Having your boat, get to know it as a mother knows her first-born. Inspect it as a diamond-buyer inspects a gem. If you have suspicion of a weak spot, seek it out, even though it be down beside the keel, and to see it you must lie on your back in mud. That is the only way you can set up confidential relations between yourself and the boat, and also get the right grip on yourself. Seeing is knowing, and when you know your boat, and can swear to the condition of every seam and butt in its hull, you are a better man than your neighbor who takes somebody's word for the condition of his packet. Further, he knows you are, and you acquire merit in his eyes.

As for the effect of mud on your person, think nothing of it. Good honest mud never hurt any son of Adam. It may be damaging to fine fabrics, but when you begin to work on your boat in the Spring, you are fortified with old clothes. Therein you have an incidental but priceless source of joy. If there is any greater pleasure than wearing old clothes in a boatyard—the kind that are mud-proof, and to which tar and paint are as encrusting jewels—I have yet to hear of it. With your old clothes on, you can get close enough to yourself to find out if you are really any good at any handy job—thereby scoring heavily on your friend who doesn't possess a boat, or some such excuse for getting back to first principles. There is a democracy of old clothes in every boatyard, which measures each man by his worth. Therefore you select your wardrobe for the yard with loving care. That

is one of the delightful occupations of early Spring Sunday mornings, before you set out for the yard at all. Each familiar old garment is then examined, slowly and lovingly. You had never supposed that old blue flannel shirt—the one with the row of sail-twine mending up the side, and the back of greenish hue, toned by salt and sun—would hold much interest for you again. Now it is a sacred vestment. Its very smell arouses memories of great days afloat. You pack it in the bag with a tender touch, saying, "Good old shirt," as if it were alive, and understood.

With your beloved wardrobe in your grip, how you hurry on your way to the boatyard! You can't get over the ground fast enough. As the spars of the boats in the yard come in sight, you are quick to pick out your own. Last week that spar was nothing to you. You didn't know it existed. Now you nearly trip yourself up with haste as it comes into view. When you arrive at the boat, you climb aboard like a man looking for a fire. Your shore-going togs come off forthwith, you climb into your familiar garments as a fisherman would slip into his sea-boots when the old man bawls down the gangway, "All hands on deck"; and in about a jiffy you are ready for the absorbing business of burning off paint, calking, paying seams or varnishing. You work as long as the light lasts, and grumble when the end of twilight comes, and you are obliged to go to the 'phone and tell your wife what train you will be home on.

You leave the old yard with regret at nightfall. The master of the yard, an ancient mariner of whaling days, we will say, has become your friend. You never would have known him in your ordinary walks of life, and you prize his friendship accordingly. He has been kind to you, indulgently overlooking your ignorance of some of the lore of which he is master. He has told you that hard cotton will not stick in a seam; that calking should be done with a gentle tap of the iron; that spar varnish will not dry inside a cabin without free ventilation; that white-lead putty has certain sovereign virtues not possessed by whiting and oil; that a canvas deck will "crawl" if not put on wet and allowed to shrink; that bronze blocks with iron sheaves will not last, by reason of galvanic action—and a host of other things, small in themselves, that are worth knowing, and are learned only at first hand.

You have a liking, also, for the old boss carpenter of the yard, who has given you valuable tips on the relative worth of white oak and red, of Oregon fir and Maine spruce; who has loaned you a chisel now and again out of his kit; who has shown you how to use a ratchet bit, and who has been kind and forbearing and interested, and has become your friend.

The old painter, though grouchy at times, has given you a better understanding of his art than you ever had before. From him you have learned that there is a good

deal more in painting a boat than the mere smearing on of lead and oil. He has instructed you also in the art of handling a flat scraper, which you never would have mastered by yourself.

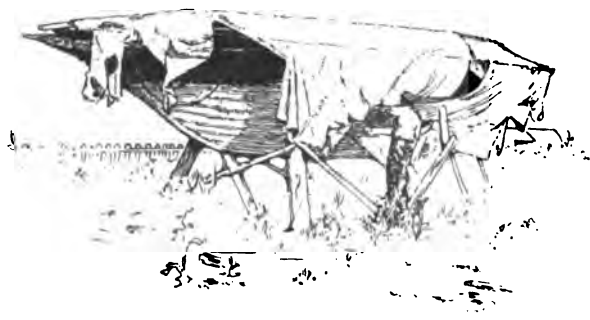
You have learned at the yard that several trades contribute to the fitting out of a boat. Calking, painting, carpentry, iron-mongery, sail-making, rigging, plumbing, electric wiring, all may enter into the fitting out of a small boat. If you get a smattering of each of these trades, enough to do all your own work on your boat, you are accomplishing much. Further, you are getting an insight into what men do who earn their living with hands and brain instead of their brains alone.

This, and the enthusiasm with which all the amateurs like yourself at the yard work on their craft, sets you to thinking about the mystery of this fun of tinkering on a boat.

There is a psychologic something in the whole business that makes things go with amazing zest. One who has not experienced it cannot quite know what it is like. It may be what the modern philosopher calls the joy of work. If it is, some psychologist should make a mental culture of the germ. But be it so or not, I know that kinds of labor which in Autumn prove burdensome, in fitting-out time are light; while the most commonplace acts, such as the sharpening of a scraper, the cleaning of an old paint brush, the polishing of a cabin lamp, are as sacrificial functions.

When all is done, and you know that on the morrow the boat will slide down the ways, and you will be free to spread your wings and sail away, there is a sense of regret that the fitting-out is over. The blow torch, the scrapers, the calking iron and the paint brushes are laid aside with a feeling akin to sorrow. It has been a noble time of anticipation, this fitting out. Will the days afloat justify those adventurous dreams that played through your brain while you labored in the yard? Perhaps, the boat may not sail as fast as you hope; the club anchorage may not be as snug; your cruises may not be as pleasant, nor the midsummer moon as bright in fact as in your fancy of fitting-out time.

Well, suppose not. The past at least is secure, and nobody can rob you of the benefit, mental and physical, that you have derived from preparing your argosy for the seas. You know yourself better than you did, both in mind and muscles. You have "come back," as they say of the boxing men. You have your own measure. You make a note in satisfaction that time has not taken as much out of you at forty as it has out of some of your friends. You are still young in spirit. The boat has shown you that, and you are content. It has been worth its cost to you in fitting-out benefits alone; and the fun yet to come in a sense is what my friend of the street calls "velvet."



AN EXPERIMENT IN PROPULSION

Albert Hickman

TO us solemn children there is nothing more alluring than the problems involved in putting that newest wonder, the internal-combustion engine, on some sort of suitable float and seeing how fast we can make it paddle itself over the surface of the sea. It is a great game. Hydroplaning, they call it: not because there are any planes, but probably because of some dim idea that the surfaces used to make the machine get up and scoot may have been planes once, before they were twisted out of shape to conform to the fashion of the moment. Skimming, as Sir John Thornycroft has it, is probably the better term, for the days of what the scientists of this era calls the "displacement racer" have softly moved down into history, and a little boat that would travel at 60 miles an hour across the sea must skim, or stay home.

The sport at present seems to differ from aeroplaning, or flying, in so far as that you are supposed to be more or less habitually in contact with the water, but the days of Mr. Kipling's "bat-boats" are doubtless not far hence. We have already the Ravaut-Saunders aerohydroplane.

For those who may not have read that amazing story, "With the Night Mail," it is worth quoting a few editorial remarks from the magazine in which it is published, A.D. 2000—barely 89 years ahead.

"BAT-BOAT RACING

"The scandals of the past few years have at last moved the yachting world to concerted action in regard to 'bat'-boat racing.

"We have been treated to the spectacle of what are practically keeled racing-planes driven a clear five foot or more above the water, and only eased down to touch their so-called 'native element' as they near the line. Judges and starters have been conveniently blind to this absurdity, but the public demonstration off St. Catherine's Light at the Autumn Regatta has borne ample, if tardy, fruit. In future the bat is to be a boat, and the long unheeded demand of the true sportsman for 'no daylight under mid-keel in smooth water' is in a fair way to be conceded. The new rule severely restricts plane area and lift alike. The gas compartments are permitted both fore and aft, as in the old type, but the water-ballast central tank is rendered obligatory. These things work, if not for perfection, at least for the evolution of a sane and wholesome *water-borne* cruiser. The type of rudder is unaffected by the new rules, so we may expect to see the Long-Davidson make (the patent on which has just expired) come largely into use henceforward, though the strain on the stern-post in turning at speeds over 40 miles an hour is admittedly very severe. But bat-boat racing has a great future before it."

Wouldn't you think it was the Oldman riding down the spine of some poor beggars who thought they were so nicely and quietly beating the rule? Only it has the

untransplanted Englishman's frightful straitness of expression.

And here is a bat-boat advertisement culled from the want-and-for-sale department of the same journal of the clubhouse fireside.

"Also, by private treaty, racing B. B. Tarpon (76 winning flags) 120 knt., 60 ft.; Long-Davidson double under-rake rudder, new this season and unstrained. 850 nom. Maginnis motor, Radium relays and Pond generator. Bronze breakwater forward, and treble reinforced forefoot and entry. Talfourd rockered keel. Triple set of Hofman vans, giving maximum lifting surface of 5,327 sq. ft.

"Tarpon has been lifted *and held* seven feet for two miles between touch and touch."

Now, suppose we come down out of the air.

These things are hardly dreams. The 40-foot Thornycroft hydroplane already built by Messrs. Dixon Bros. & Hutchinson is fitted with two 400-h.p. Orleans engines, within 50-h.p. of Tarpon's nominal power, and may attain to near half Tarpon's stated speed in the present year of grace. The trouble with the Thornycroft ship is that she has to drag through the water two shafts, two outboard bearings with their supporting brackets, the bosses of the propellers, the inefficient portions of the blades, and a rudder to finish the lot. How much power will it take to haul these through the water at 60 miles an hour? Tarpon is driven by an air propeller, and so is saved the effort. So, also, she is a would-be rule beater.

But the committees in charge of the British International Trophy Race have looked after her ninety years before she is born. In the revised conditions under the Deed of Gift, December, 1910, condition 6 reads:

"No limitation shall be placed on the form or description of the motive power employed, provided that the motive power is wholly mechanical, and also provided that its propelling mechanism acts only in or against the water."

That is to say, no air propellers, please.

So much for the prelude.

In the latter part of the Summer of 1910 we felt constrained to invent a new kind of Viper. It was not in any way intended to supplant the original Viper, that had drawn the attention of Mr. Seth G. Malby and others, and which we call the low-power Viper, but was designed to operate to best advantage only under powers that were high in proportion to the size of the hull. That is, we were to work on a boat that was to operate at relative speeds above the point where displacement takes care of itself, and the problem of rapidly reducing wetted surface, and so reducing frictional resistance, becomes of primary importance.

We made models, and throughout the golden Autumn we towed them, not in tanks, but in the sea, behind a spring scale in the stern of Viper III.

The models were various. There were boats with steps in their bottoms and boats without. There were boats with V sections forward and boats with flat sections. There were boats with corrugated iron on their bottoms with the corrugations running athwartship at certain angles to the keel, and in them all were iron weights that were shifted into various positions. Some of these chaps worked in an astounding way at speed, perhaps most especially the one with the corrugated iron. Some of them went six clear feet in the air at a leap and then sounded with the smooth celerity of a scared porpoise and dug up the mud of the harbor bottom with their snouts, until the investigator in charge of the engine became incapacitated with laughter and permitted the tow-line to saw its way through the scientist in the stern and into the after deck. To work in a laboratory that is endeavoring to skip out from under you is highly precarious, but we learned a number of things, many of which had already been learned by other people. We learned, for instance, that beyond certain weights, monoplanes were assuredly more efficient than biplanes, and that beneath these weights biplanes and multiplanes seemed to show marked advantages. We learned something about the distribution of weights in biplanes. Out of the experiments we evolved a form of hull and a certain inference, which may have been the more valuable of the two assets. It was something to the effect that so long as a model was skimming, there were certain general resistances to be looked for at any given speed per ton, and that slight alterations in hull form did not seem to be responsible for as wide variations from these resistances as we had been led to expect, and further, that in many cases, marked al-

teration in hull form might show effect rather in seaworthiness than in altered resistance. Always presupposing, of course, that the models were skimming. But this article was not intended to deal with hulls.

Autumn was finished and Winter was closing in before we thought of making an experiment or two in propulsion. For a long time the opinion had been gaining strength with us that the screw propeller was a poor arrangement for driving a boat at extreme high speeds.

Going back to first principles, the argument went something like this:

In the development of the speed boat the first great and important resistance to be got rid of was that involved in the actual mechanical displacement of water; the boat must be made of such form, or so light in proportion to her power, that she would get up and practically slide along on the surface. Frictional resistance, skin-friction, was almost negligible by comparison with the various displacement resistances. This was accomplished, and speeds increased rapidly. Frictional resistance, the actual friction between the skin of the boat and the water (as we understand it) moved up at once into the position of first importance and had to be abolished. Steps were built in the bottoms, wetted surface was rapidly reduced and frictional resistance, to some extent, went with it. Speeds increased again. Then a new resistance stepped into the light. Shaft resistance, we shall call it, for lack of a better term.

All these boats had been driven by screw propellers, and a screw propeller by one crude definition, "operates under water, with its blades winding through the



Plate 1. With 22-inch Propellers



Plate 2. With 18-inch Propellers. Area too Small

water in a spiral direction, thus carrying the boat ahead."

Now the entire working surface of the screw propeller is the outer two-thirds, or, if we wish to be charitable, the outer three-quarters of the blade-length. To operate at all it must carry the following non-working members *under water*: The thick inner third, or quarter, of the blade, which has not only to be dragged, but driven by the engine; the boss supporting the blades; the outboard shafting; the outboard shaft bearing; and the bracket supporting this bearing. All these are non-working parts and have to be hauled through. The reason I am making such a feature of them is that, perhaps because of the apparent difficulty of getting rid of them, they have come in for scant popular attention in considering the resistances in a high speed boat. We are familiar enough with the instruction to the amateur hydroplane builder that "everything under water must be refined to the last degree to make this boat a success." Why shouldn't it? It is not only a heavy frictional resistance, but a straight displacement resistance, which is many times worse. How much power did it take to drag the wild collection of gear under the stern of Ursula through the water at 40 miles an hour? Have you ever seen a stream of even *unconfined* water 50 feet from a 1½-inch fire nozzle removing nailed clapboards as a snow-plough removes snow? How much power will it take to lug the 2½ to 2¾-inch Krupp steel shafts in Mr. MacKay Edgar's Thornycroft hydroplane, with all their attendant outfit, through the water at 60 miles an hour? Will it take a quarter of the entire power of the engines? Would the boat go faster if only the working parts of the blades were left whirling, driving the hull through some mysterious, non-resisting connection, and all the rest of the stuff were cleared away?

Water at 60 miles an hour is not the dimpling liquid we are accustomed to bathe in. It is as hard as a sun-

baked road. I have used before the illustration of a swordsman trying to cut into a stream driven from a high-pressure nozzle, and shattering the sword. Some time after this question of shaft resistance first came up in my mind I had occasion to write to Walter Bieling about it. In his reply he said that, not long before, he had been talking to Lelas, the father of all the little Ricochet type French hydroplanes, and that Lelas had told him that certain of these, if I remember, which had hollow shafts, when run above a certain speed would give a sudden spurt followed by a wild careen to one side or the other. This Lelas diagnosed as "shaft planing." That is, so great was the resistance of their sloping shafts that it was causing these little boats to get up out of the water and plane on the shafts alone. This is worth citing as an extreme instance, and it serves to bring the trouble strongly home to our minds. Even at lower speeds there is a fine illustration. If you have an ordinary speed launch put her over the mile. Then make a rough model of your underwater shaft, propeller boss, bearing and strut, fasten them to her bottom beside the real ones and put her over the mile again. You will be surprised and pained at the time she makes. It is like the green apple on the fin of the racing shell, or the small tin pint tacked to the garboard of the wind-jammer. We virtually tried the experiment. And still, this "shaft resistance" is of relatively small importance till you approach the speeds of the hydroplane.

The hydroplanes have had to consider the problem at length. Aside from sheer weight, why is it the hydroplanes fitted with high-speed engines have been uniformly successful? Evidently because the power transmitted at high revolutions meant propellers of smaller diameters and the reduction of all underwater gear. In the case of Flapper in England and the Barriquand & Marre machines in France, engines already turning 14-1,500 were geared up to little propeller shafts as big as your thumb that turned 21-2,200 revolutions a minute. The result

was a speed of 46 miles. And in the big fellows the shaft and underwater gear becomes a mighty problem. Engines must be driven till, sometimes—they burn up.

So, considering all these things, it struck us that perhaps, as was said, the screw-propeller system might not be the ideal system of propulsion for high speed boats.

The conditions differ immensely from those in which the screw-propeller system is the ideal form of propulsion. It is no longer a case of the displacement effort of the propeller balancing against the displacement resistance of the hull, as in Olympic. It is no longer a question of a propeller failing to cavitate because the water is held into coherence by the pressure of a nicely calculated average water column and an atmospheric pressure of 15 lb to the square inch beside. Here it is rather a question of the inertia of the water relative to the high speed of the propeller blade, the water being very "hard," as we crudely expressed it, under these great speeds. It is so hard, that is, its relative inertia is so great, that the propeller blade has time to press against it and get away again before it has a chance to move. And so the boat is driven. This relative inertia has had, perhaps, too little recognition in the hydroplane business. It is relative inertia that holds against the 45-h.p. impact on the little 6-inch blades of Flapper, and gives her propeller a slip of hardly 7%; it is relative inertia that hoisted Ricochet out of the water by the shaft and tilted her over on her bilge (for, while it is very good for pro-

pellers, it is very bad for shafts), and it is relative inertia that thumps the feet of the gentleman up forward in the French biplane at Monaco until they are too numb to stand on. I am featuring relative inertia, also, as it is the basis of our future calculations.

Having been displeased with the screw propeller, we had to look about for something better. First I thought of some kind of stern wheel. That would clear the bottom of all encumbrance. It might be a small metal wheel, for it would require a very slight dip as compared with the big, slow-moving wheel of, say, a Mississippi steamer. The hull resistance was low and the relative inertia of the water was high. But even the most compact stern wheel would be cumbersome and could hardly stand up to the high revolutions. And there was the comparative inefficiency of the blade entering and leaving.

Then another idea occurred. Why not hoist the propeller-shaft, boss, strut and everything clean out of the sea, and put the shaft out through the stern of the boat, so that the boss would be above the surface with the boat at speed and only the more efficient parts of the blade would engage the water? More than half the wheel would be out of water, which, for the same power, would necessitate a propeller of much larger area than would be used with the screw-propeller system; but, on the other hand, the side thrust with only the lowermost blade immersed would require the use of two wheels



Plate 3. Wide Open with 22-inch Propellers

running in tune in opposite directions, if the best results were to be obtained. Why should not this arrangement work with the utmost efficiency in boats at high speed, remembering yet once again that hull resistance is small and the relative inertia of the water is very great?

We would try it.

The only hull we had instantly available was the leaky wreck of Viper II and a 17-h.p. engine that had been in Viper III, and Winter was on us in earnest. There was six inches of snow and the ice was making in the rivers. It was a race to see if we could get her overboard before the harbor closed.

The engine was a three-cylinder Ferro, two-stroke, $4\frac{1}{4}$ by $4\frac{1}{4}$ inches, and in Viper III had been driving a two-blade Harthan propeller 17 inches diameter by 24 inches pitch at 1,040 r.p.m. We ordered a right and a left-hand three-blade Harthan propeller 22 inches diameter by 24 inches (the same) pitch. The two wheels together had practically six times the area of the 17-inch propeller. The engine was put in the boat slewed off the midship line to drive one (the starboard) propeller direct. The port propeller shaft was to be driven by a gear off the tail shaft line. The shafts swung off from each other at an angle of 18° , 9° from the line of the keel. We looked about for a suitable bevel gear pattern, but could find nothing of the correct angle in the heap, and as there was no time to make one, we

threw into the sand the pattern of a 6-inch stub-tooth spur-gear, and when the gears came out chopped the corners off with a cold chisel to make them an approximate fit. We left the engine to fit them accurately for herself. The shafts were two $1\frac{1}{4}$ -inch steel bars run in rough-babbitted journals and the thrust of the second shaft was taken by a collar against the journal. There were two stuffing boxes let into a piece of birch bolted inside the sternboard. Altogether there was 100 lb of odd gear in the stern—the bill says more. I am giving these details to show what chance there was for any power that might have left the engine getting as far as the propellers.

On top of this we had precisely the opposite conditions to those under which the experiment should have been a success. It was designed to show the efficiency of the system with a light hull under high power. We had a heavy, leaky hull with low power.

When the contraption was finished one of the boys said that, speaking of wheels, she made Ursula look like a toy model: and she did. We started her up in the shop to get a little thick grease worked into the gears and she removed the shavings from the floor and windrowed them on the benches. Even here we could see that the gears were developing into a new shape.

Then we put her on a horse-sled, took her to the wharf, and dropped her into the ocean. She leaked, not a little seepage, but fountains through nail holes, the re-



Plate 4. Stern View at Full Speed

sults of former experiments. The second engineer fixed himself a seat over the shafts and took up his position with a broken pickle bottle full of grease and an iron spoon to apply it to the gears, and we started. The citizens on the wharf restrained their expressions only with effort.

The propellers turned outward at the top—the star-board wheel right-hand. The blades projected five inches beyond the sides, so that they might have a wipe at anything that passed that way, and the *wop-wop* as they smote the water was most impressive. The citizens dissolved in tears. Then we opened her up. Did she stand still and churn the sea according to announcement? Not to any considerable extent. The pickle bottle lurched on its seat and when I found time to look up we were careering across the harbor. In this Christian country it is not permitted to write down the precise words of the second engineer, but they were to the effect that we were moving.

We were; and after a few carbureter adjustments we moved more. There was no vibration. I think she was the most vibrationless small boat I have been in. But that may have been accident. There was no stream of water heaved 40 feet astern. There was nothing but a thin cloud of spray that trailed 10 feet behind. And we were then making a fair 18 miles an hour. The stuffing boxes steamed, the sculptured gears complained as the second engineer fed 'em with black grease as a mother feeds pap to an infant, and the engine was visibly not turning over, but in spite of these things we were making 18 miles, or so it seemed. Not that 18 miles is Speed, that touchstone by which the g.p. tests all things, but under these laborious conditions 12 miles might have been good business.

After a couple of miles run I went ashore, and with

Mr. W. C. Wetmore, Captain John L. Reid, first officer, and Mr. Fergus Ferguson, second officer, of the Dominion Government ice-breaker Earl Grey, timed her in four runs over the measured mile. The operator raised a signal as he came near the ranges at the far end of the mile, and dropped it as he crossed the ranges. Viper III, a new, dry boat, with everything installed properly, with this engine turning a screw propeller 1,040 revolutions, had shown her best mean time over the mile as 2 min. 53 sec.

The new machine went down over the mile the first time, with the tide, in 2 min. 59 sec., and came up in 3 min. 25 sec. Then we pumped her out dry, scooped her clean of slush and snow, and sent her down with the tide again. The watch unquestionably showed 2 min. 30 sec. (Plate 3.) There was, in all probability, something wrong with this mile: the operator may have mistaken his ranges, though the glasses showed the boat in what was apparently the correct position for the line. On the other hand we noticed that she seemed sensitive to changes in weight, and with everything pumped dry she really may have— However, it is no matter in such rough approximations as this. She was going 18 to 20 miles an hour, which was all that mattered under these conditions. She came up the next time against the tide in 3 min. 15 sec. It must be remembered that she was making water by the bucket and that more accurate results were impossible.

We had installed no tachometer and up to this time had made no attempt to get her revolutions. One man could not handle the boat and take them with an indicator and a stop-watch. I got in her again and the weight of the extra man made a marked difference. We went down over the mile in 3 min. 34 sec., stopped,



Plate 5. The Port Propeller can be Seen in This Picture



View of Gears Used in Experiment

pumped out and had a general reorganization, and came up in 3 min. 59 sec. The revolutions averaged 813, but were doubtless considerably higher with one man aboard. Averaging the results, you get a general idea of what was happening. Perhaps the first thing that comes home is that a 20-foot boat had made a speed of 20 miles or thereabouts, on a total draught of a foot of water. And incidentally she seems to be entirely weedless. I ran over several fair beds of eel-grass and the air was full of it, as from a hay-tedder, but for obvious reasons it did not wind around the shaft.

From a little distance the onlooker would hardly realize that there was anything unusual about the boat or her method of propulsion, until she had come up and passed, when it was decidedly startling to see the twin halos of the bronze propeller blades shining in the sun. The tips of the blades projecting beyond the stern can be seen faintly in one of the photographs. (Plate 5.) Also, as she comes to dock, the engine sitting dead level and the shafts running aft almost parallel with the floor timbers give a curious impression. But the change is most fully realized when the boat is hung up on the crane. A bottom clean of all obstructions, with nothing showing from end to end except the little scoop over the water intake. Beyond the stern the working surfaces of two propeller blades projecting downward a bare 9 inches. This would be everything in a boat of this type properly

fitted for obtaining full efficiency, as we shall show. In this particular case we used also a small rudder, 8 by 10 inches over all, and the boat steered with ease.

Now, it would seem that a craft of this type should attain the utmost efficiency at high speed, provided that no unforeseen defects are developed. From our own experience in this and one or two later experiments, it appears improbable that anything of the sort will occur. Before putting the boat in the water the only trouble I looked forward to was vibration caused by the impact of the blades on the water, but a moment's thought will show that, if the slip is small, the blades approach the water directly edgewise—in their spiral courses. And there is every indication that, with one man aboard, the slip was extremely small at speed. A little slip, in this case, would be an advantage, as it would serve to carry air down at the back of each blade and so do away with the friction on that surface. Our 813 revolutions with two men aboard, and possible 840 or 850 with one man, show that our 22-inch wheels were somewhat too large, or rather, that they were permitted to dip too deep for the amount of power that reached them after dealing with the gears and the various bearings. The center of the shafts was 2 inches above the bottom of the boat. If there had been universal joints in the shafts and we had been able to rack the tail-shafts up an inch or two, as shown in one of the sketches (Plate 8), we should have reduced the working area of the propellers by withdrawing the most inefficient part of the blades from the water until we had obtained maximum efficiency from the engine. An arrangement is also shown for raising the rudder, so that the least possible necessary area of it will be immersed at high speed.

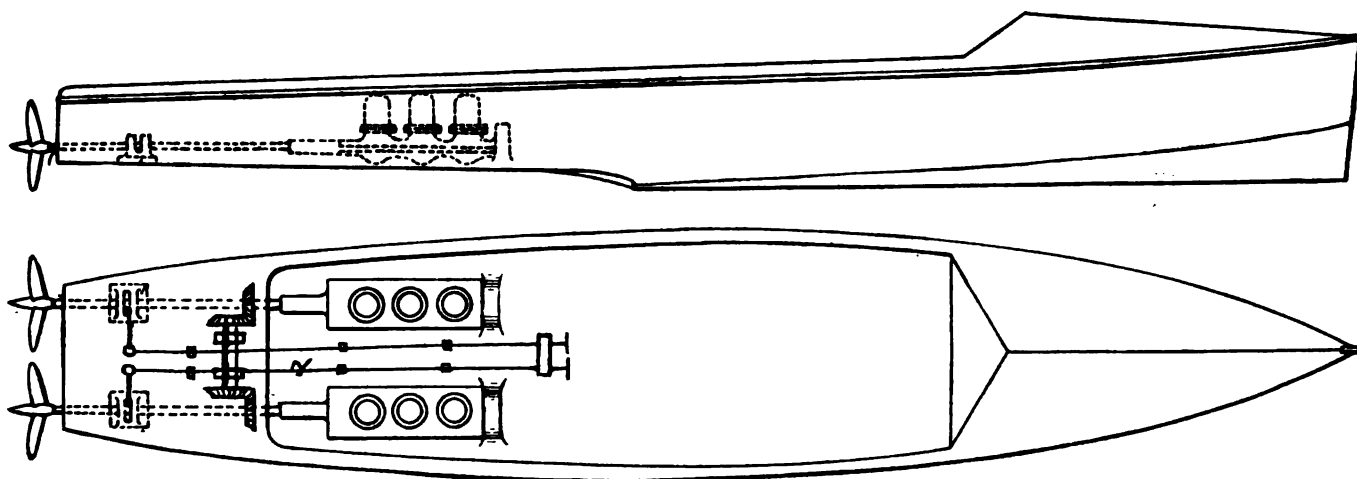
But when it comes to practical application, there is, in all probability, a much better arrangement than this. Do away with the rudder altogether and use reversible propellers, with the blades accurately controlled by worm gears. The hub, being out of water, can be made as large as may be desirable to contain reliable mechanism, and the reverse gear, with its attendant weight, is done away with. The shafts revolve in tune in opposite directions with the lower blades of the wheels turning inward. After the blades have been set at the most suitable pitch to get maximum efficiency from the engine, which should, of course, approximate the normal pitch of the propeller, let go one control wheel and steer with the other. You will have a steering arrangement more sensitive



View of Afterbody of Ursula



Note Absence of Appendages on Viper



Figs. 6 and 7. Showing Engines Geared in Tune. Reversible Propeller Controls

than any rudder and you will lose no speed on the turns. Besides, the greater pitch being left on the outside wheel will list the boat inward on the turn. Go out under the trees and think it out. It's beautiful.

The more you increase the speed, that is, the higher the relative inertia of the water becomes, the less deeply the propeller blades need dip, until in a hydroplane at 85 miles or so, they will just nicely nick the surface, and you can photograph the nicks in the wake and measure the slip with a foot-rule. You can see the nicks immediately behind the propeller in one of the present photographs. (Plate 5.)

I am talking as if all this were all accomplished, but when an experiment suggests possibilities it is better to mention them for the good of mankind and the inspiration of the critics.

Presupposing that the principle proves quite as feasible as this experiment would seem to indicate, then its main advantages over the screw-propeller system of propulsion are worth tabulating, as below:

(1) No propeller-boss, shaft, outboard bearing or strut under water, and consequently one of the major resistances in high-speed boats done away with.

(2) The more inefficient portion of the propeller blade moving in water of least density at the surface: the thinner and more efficient part of the blade reaching down into denser water. Another resistance reduced.

(3) Propeller of larger diameter, greater pitch at same pitch ratio, hence the same speed at lower engine revolutions.

(4) Propeller shaft may be of as large diameter as desirable without in any way impairing efficiency of boat. Less expensive material.

(5) Bearing supporting propeller can be adequately lubricated and may be of any length considered desirable.

(6) After bearing set solidly in sternboard, where

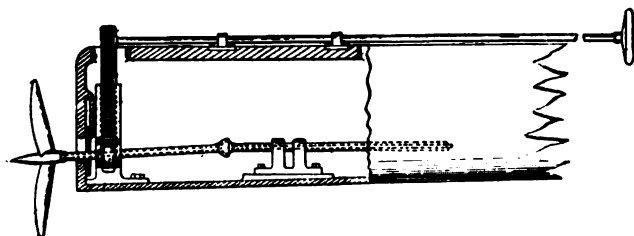


Fig. 8

its leverage on the structure of the boat is done away with and the tendency to cause vibration is largely reduced.

(7) No shaft log through bottom of boat. A source of leaks and an extra bearing eliminated.

(8) If engines have to be placed aft for the sake of trim, no gear box necessary and one-third the shafting. Marked saving of weight and expense.

(9) Engines may be placed far aft, and driest part of boat forward used as passenger space. (Plate 7.)

(10) Engine at any position in boat will be set practically level. (Fish out all the old automobile investigators and gear 'em up.)

(11) Reversible propeller may be used and blades set at pitch to give maximum engine efficiency, also furnishing a sensitive system of control without rudder. Therefore, no rudder; no reverse gear.

(12) No shaft, strut, or rudder to be damaged by running over submerged obstructions. Propellers replaceable from the boat afloat. (Return to the Hudson as a racing field. If you have a slight accident light a cigarette and say: "John, you might put on a couple of new wheels." After three minutes, proceed.)

(13) Draught of water below bottom of boat from 35% to 50% less than in screw propeller system.

(1) Disadvantage. You must have two shafts running in opposite directions in tune to give greatest efficiency.

And, to make the story complete, when the Winter time comes, shift those propellers, put on a pair of worm wheels such as they use on some of the Antarctic sledges—and a radiator—and she should travel nicely over the snow.

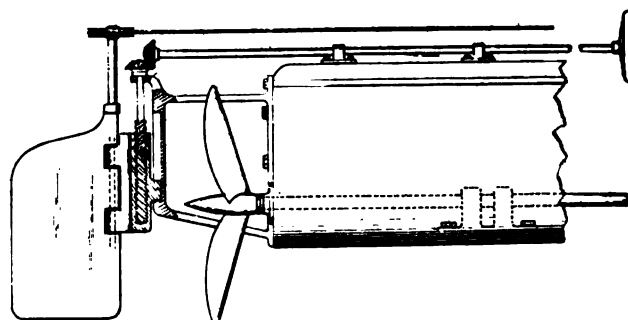
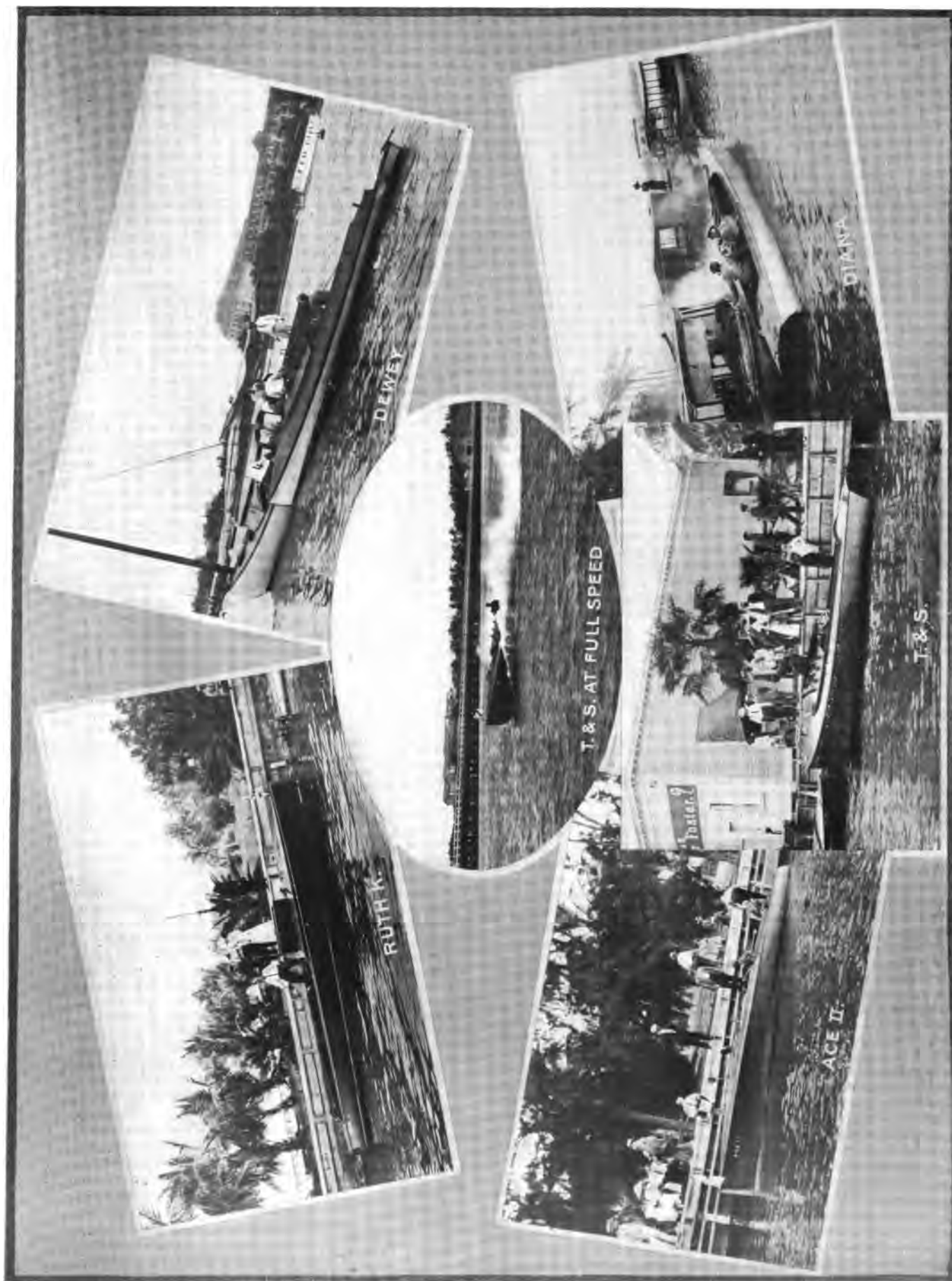


Fig. 9



Sterling-Engined Boats at the Seventh Annual Regatta of the Palm Beach Power Boat Assn. These Boats Made Practically a Clean Sweep at the Regatta

THE EAGLE COMPANY

SINCE the first of the year The Eagle Company have been located in their new plant at Newark, N. J., where with 100,000 square feet of floor space and over 500 employees, they are in a position to meet the great increase of business earned by the popularity of the Eagle engines, which they are now manufacturing in no less than fifteen different models, all of the two-stroke type from $1\frac{1}{2}$ to 25-h.p. with both make-and-break and jump-spark ignition.

As will be seen from the accompanying illustrations the company employs the most modern machinery and methods in the manufacture of their product, and they turn out in their own plant everything that goes into the finished machine with the exception of the ignition, carbureter equipment, and reverse gear.

The Eagle factory is open to any one interested in the inspection of their engines; and the progress of the work may be followed through the successive stages from the foundry to the shipping department. Every piece is inspected in every department before assembling, and a final inspection given before the machines are placed on the testing blocks, ten at a time, and run until each individual machine develops the required horse-power, and has been properly adjusted.

A trip through this factory, aside from being very interesting to the prospective purchaser, makes evident the fact that the employment of the most modern methods

and the use of the most up-to-date machinery is responsible for the efficient service given by these engines.

An interesting point in connection with Eagle methods is the retention, in a fireproof vault, of all the patterns and drawings that have ever been made for any part or fitting in connection with their product, thus providing a complete record of the development of not only the whole machine but each individual part, and when progress makes possible or advisable a change in any particular, the records are carefully preserved for future reference. They also have a system of tests whereby all the material going into the machines receives a test each day and a general analysis is made each week, the result of which refinement and experiment is a finely grained free working iron that provides excellent castings. The cylinders being in every respect the equal of those used in the manufacture of the highest priced automobile engines. All cylinders as well as all other machined parts are ground to jig, thus insuring absolute interchangeability.

As regards the accessories which the company furnishes, the following equipment specified by them shows this part of their outfit to be second to none. The clutches are the well-known Paragon, Hyde Windlass Company's propellers, Perfex ignition, with Connecticut timer on the jump-spark models, Thermex silencers, Holtzer Cabot, and K-W magnetos, with the rest of the equipment in keeping.



Interior Views in The Eagle Company's Machine Shops



PART OF TESTING ROOM



FINISHED INSPECTION DEPT.



CORNER OF THE FINISHED PARTS ROOM



CASTING INSPECTION DEPT.



GENERAL VIEW OF MACHINE SHOP



ASSEMBLY ROOM



TOOL MACHINE SHOP



VERTICAL MILLING MACHINES



GENERAL VIEW OF PLANT



FOUNDRY

AUXILIARY BARQUE QUEVILLY

FOR the past fourteen years the Sandy Hook pilots off New York Harbor have at different times witnessed the arrival of the French barque Quevilly, and when she recently arrived off the bar with all sails furled and jogging along at a good seven knots, she received considerably more attention than she ever did before, since she on this voyage unquestionably marks an era in the history of sail.

There are many auxiliary commercial sailing craft, but Quevilly is the first craft equipped with Deisel engines to cross the Western Ocean, and according to the experts, she is the forerunner of the type which will revolutionize sea navigation.

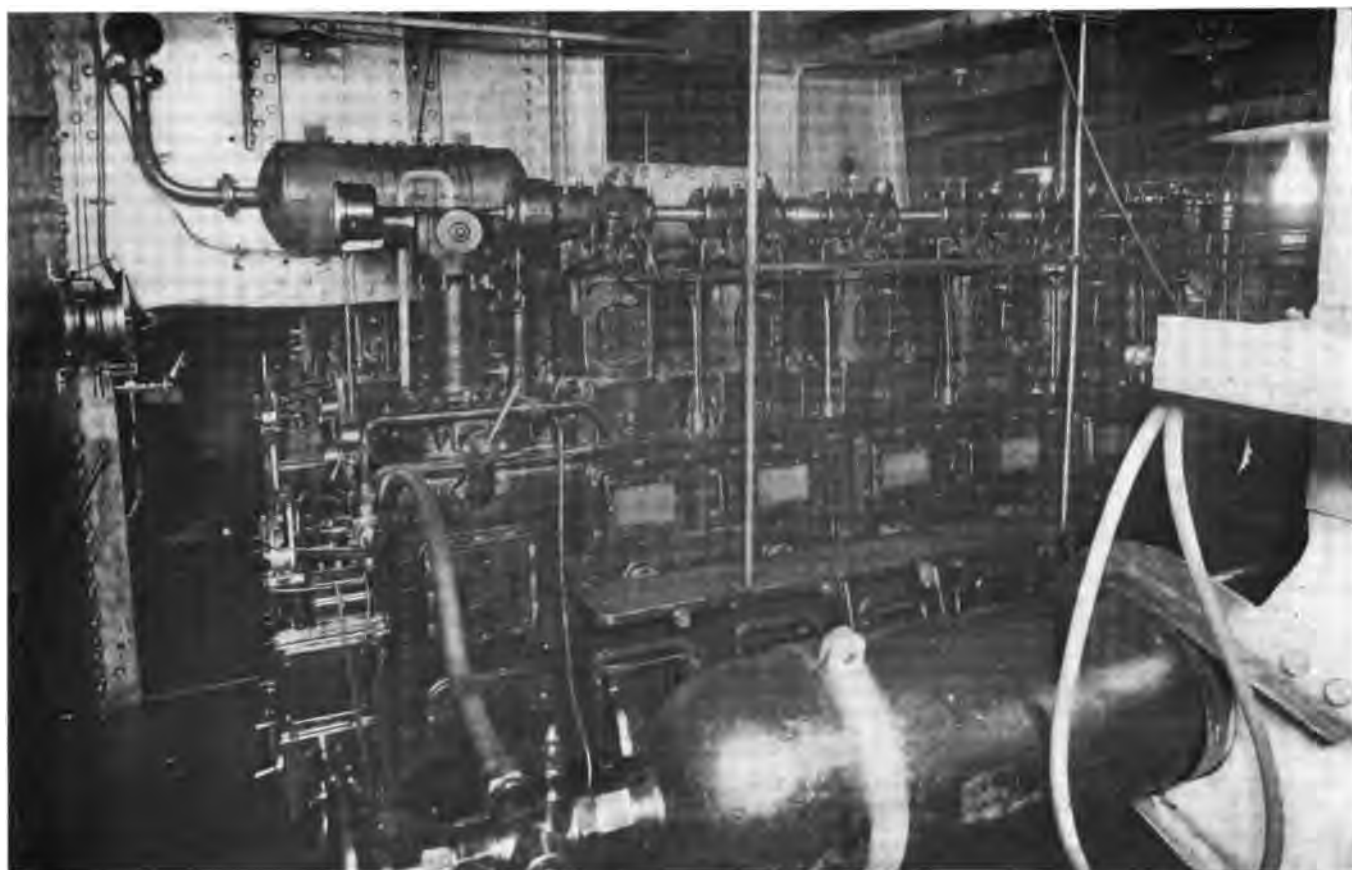
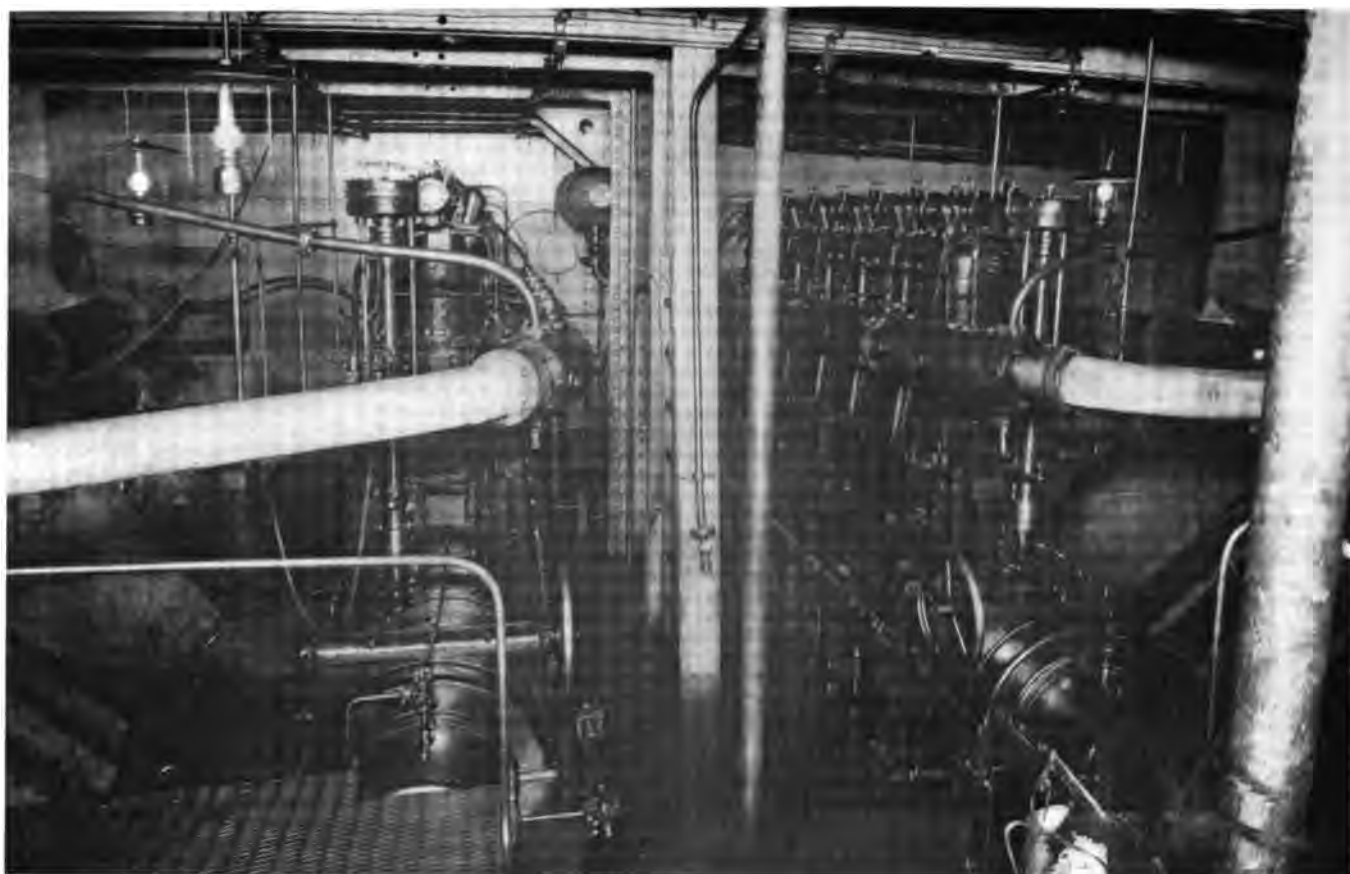
Quevilly is a four-mast barque of 3,272 gross tons. She is 322 feet over all, 45 feet 5 inches breadth of beam, and 24 feet 2 inches depth of hold, and was launched from the yards of Lamport et Cie., Rouen, France, in 1897, and no doubt since then she has wasted, in the aggregate, months of valuable time waiting for winds to propel her and towboats to tow her into harbors. Now she is practically independent of the weather and wholly free from the necessity of towing.

The engine room is below decks in the extreme stern of the barque and the engines are located on either side of the keelson, the shafts leading through the hull alongside the rudder-post. When the barque is under sail, the shafts are uncoupled and the four-blade screws turn free, making not more than half a knot drag, according to Captain Victor Lagnel. At full speed the engines are turned at 300 r.p.m., and there is practically no noise even in the engine room. The engines are started by compressed air kept in steel reservoirs at a pressure of 112 lb, and the high compression in the cylinders ignites the oil charge without the aid of electricity, or priming of any kind.

Each engine is of six cylinders, developing 300-h.p., and is about 15 feet long and 6 feet high and weighs approximately 15 tons. The control is as simple as that on an automobile. A small lever, with various pressure gauges before the eyes of the engineer, is all that is visible on each operating platform. The engines can be sent ahead or reversed with a turn of the lever to the right or the left. Marine telegraphs connect the engine room with the bridge amidships and the barque when underway is operated with the ease of any steamship.



Auxiliary Barque Quevilly. Her Engines Consist of Two 300 H.P. Diesel Engines Operating on the Cheapest Grade of Fuel Oil



Engine Room of the 3272-Ton Barque Quevilly, Showing the Two Six-Cylinder 300-H.P. Diesel Engines

The cheapest grade of fuel oil is used, costing at present about three cents a gallon, and with a fire test of 165° Fahrenheit, so high that it cannot be ignited with an ordinary match. The engines consume about 60 kilograms of oil each per hour, when running at top speed, at a cost of approximately less than \$2 an hour for the 600-h.p.

The captain stated that on one occasion coming across he ran the engines for 28 hours continually, and on the night before making harbor the wind went flat and he ran all night under power and made port the next morning, coming in like any steam vessel, and making her anchorage in the Narrows without assistance.

The owners of Quevilly—Mons. Prentoul, Le Blond & Leroux—are now having built in Bordeaux, France, the largest sailing vessel in the world—a five-mast barque of 7,000 tons, which will be launched in November, and also commanded by Captain Lagnel. She will be

christened France, and will have auxiliary engines of 1,800-h.p. These engines, of the Diesel type, have been designed by a Belgian engineer, Mons. Carel, and are being built at the Creusot works, in France.

France will enter the nickel-ore trade between New Caledonia and France, and when the Panama Canal is completed will pass through under her own power. Captain Lagnel firmly believes that the Diesel engine has solved the problem of auxiliary propulsion for sailing vessels, and that henceforth calms and head-winds will be conquered, with a great increase in the earning capacity of such ships.

Many a good old sailing craft that has been crowded to the wall by the competition of the steam packets, may now, by the expenditure of a comparatively small sum, again become a profitable investment.



HURRAH'S NEST

"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



RUDDER STATIONS

THERE are about two hundred Rudder Stations along the Atlantic seaboard, the Pacific coast, and the shores of the inland waters of these United States. Each one of them is a living, shining example of the genuine interest the Oldman takes in yachting and yachters. Each station has its peculiarity—one might say its atmosphere—and there are some where even "temperament" would fall a trifle short.

We believe it is a duty and we know it's an honor to fly your flag. To make doubly sure that the "rag" still flies, we've painted it in flaming colors on each of our

gasolene signs, one on the street, one on the water side of the shop, and the flag itself flies from the derrick top. We are glad to do our part toward booming the sport of yachting.

ATKIN-WHEELER COMPANY.

Halesite, L. I.



FOURTEEN THOUSAND FEET UP

If you have a subscriber higher up from the sea level than I am—14,000 feet—let him sing out.

ANDREW L. FORBES.

La Fundicion, Peru.



Rudder Station at Halesite Long Island

ON LUBRICATION

OUR experience in the lubrication of the two-stroke engine by the addition of the lubricating oil to the gasoline in the tank, covers a period of over five years of experiment and use. We began by using an oil cup in the manifold just back of the carbureter and obtained only fairly good results from this arrangement due to the uncertainty of the regulation and the feed.

From this we naturally began to mix the oil with gasoline in different quantities and under different conditions; finding that the oil would stay in suspension and by actual brake tests that we did not lose any power, we extended our shop tests to our own engines and some of our friends', on whom we could depend. These experiments convinced and satisfied us that the system was absolutely reliable.

During this time we redesigned some parts of our engines to better adapt them to the system and then discarded all oiling devices of every kind except the hard grease cups on the main bearings, which we still use, and to-day we will not guarantee one of our engines if oiled by any other system.

For our engines we advise from one pint to one quart of cylinder oil to each five gallons of gasoline, the amount depending upon the speed and style of the engine, and to each engine we attach a plate giving the proper amount of oil for that particular machine.

We believe this to be the only oiling system which will produce absolutely uniform and perfect lubrication under the varying conditions of marine use, and the satisfaction one has in bad weather or at night, of knowing that the lubrication is O. K. cannot be overestimated.

WATERTOWN MOTOR COMPANY.

Watertown, N. Y.

MODEL HOW-TO SCHOONER

I ENCLOSE herewith a photograph of a model schooner I built from your instructions in "How to Build a Model Yacht" and from the plans of the model schooner Erin in that book. I am tremendously pleased with her.

I had built one or two boats by the old solid-block method, but did not know about the labor-saving "bread-and-butter" way until I got your book.

The plans call for a boat about 60 inches over all, but as this would be rather bulky to carry I built her 46 7/8



Model Schooner Yacht Built from Rudder "How-To"

inches over all, or just five times as large as the lines published in the book. This reduces her weight to less than one-half that of a 60-inch model.

I regret very much that I cannot send you a photograph of her in the water, but as I have only sailed her once since she was finished, and that on a cloudy day, it was impossible.

She sails finely, as far as I have tried her.

C. FAYETTE TAYLOR.

Montclair, N. J.

MUSHROOM ANCHORS

WE have your favor of recent date asking us if we ever made any careful experiments on the holding power of the Bulb-Shank Mooring Anchor as compared with the ordinary mushroom anchor, and we are very sorry to inform you that we have never made any experiments in this line, but we know that the holding power of our Bulb-Shank Mooring Anchor is far ahead of the ordinary mushroom from the experience of our customers, and the very fact that the bulb on the end of the shank holds the anchor in its proper position shows conclusively that the Bulb-Shank Mooring Anchor's holding power would be much more than that of the ordinary mushroom, size for size with the ordinary short, straight shank.

The tendency of the ordinary mushroom is not to lie down in a horizontal position on the bottom as it should, but is to stand up. Most everybody knows that has had any experience with the ordinary mushroom that the great trouble with them is they stand up straight and where they are used in shallow water they not only do not hold but they are very liable to puncture the bottom of the boat; in fact, we know of many cases where this has occurred.

The bulb on the end of the shank of our mooring anchor keeps the shank down where it belongs and forces the mushroom to dig into the bottom as it should. We have sold thousands of these mooring anchors and we have yet to hear of a case where the Bulb-Shank Mooring Anchor has failed to hold perfectly under any and all conditions, and we know that this cannot be said of the common mushroom anchor; but experiments *we* have not made, consequently can give you no data in this respect.

FAIRHAVEN IRON FOUNDRY COMPANY.

Fairhaven, Mass.

A PLEA FOR THE MARBLEHEAD

STOWED away somewhere in the home of the winner of the first Marblehead Race there is a cup of hammered copper which was presented by Skipper Day as a stimulus to promote a long-distance race between ports adjacent to Boston and New York, for the purpose of encouraging the design of seaworthy boats, the construction of reliable engines, and improve generally the breed of small, comfortable and safe cruisers. The course of this race takes one around Cape Cod, which is a name that does not inspire the amateur with much confidence. However, all the boats in the first race got around safely, but unfortunately only one went around without quitting the course at some stage or other, and as she was the smallest boat and finished first she won the race. So much for pluck, and her achievement should have convinced future contestants that the dread Cape Cod in Summer is largely a myth, and that the principal difficulty likely to be experienced on the trip is cold feet. For a couple of years the race flourished, mainly through the efforts of two of the

committee on either end, who worked hard, sent out many circulars, and wrote many personal letters, but for the last couple of years the interest in the race has lagged, a condition to be deplored since the race was in a fair way to become a classic in the annals of power-boat racing.

Engineers are now madly picking a ditch through the neck of the Cape and it will not be long before the trip will be made so easy that even the large auxiliaries and seagoing schooners will be able to make the trip in perfect comfort; but before the trip gets too easy it is to be hoped that a few more Marco Polos and Magellans will attempt the voyage before the ditch-crawling generation is in the majority.

There are no end of boats which could make this race in perfect safety and comfort, and as the writer has been fortunate enough to have been on the winning boat three times straight, besides having been a participant in the only accident the race has known (dumb work), he feels that he can enthuse about the safety of the trip without fear of contradiction. Commencing at the New York end and going through the Sound the principal danger consists of the crew either going to sleep or drinking too many healths before Race Rock is reached. The Government has sprinkled so many buoys, lighthouses and other aids to navigation about this particular part of the country that the trip is not half as dangerous as going down Broadway after 2 a. m., and there is always the assurance that you won't be picked by a taxi. On Long Island Sound, if you keep your lights burning, the steamers will keep clear, and it might be noted here that the tugboat captains and Sound steamer pilots do not go out of their way to chase yachtsmen ashore, expert testimony to the contrary notwithstanding.

W. M. B.



Built in Suva, Fiji Islands

Fiji Island Launch

THE craft shown in the accompanying illustration was built in Suva, Fiji Islands, by S. A. Griffen for W. E. McGowan. She is 33 feet over all, 8 feet 3 inches breadth of beam and draws 3 feet 3 inches. The keel is of 6 by 3-inch Australian blue gum and the stern part of Fiji natural crook in one piece forming horn timber for counter and stern-post. The planking is of $\frac{3}{4}$ -inch kauri pine.

"The cabin is equipped with drop railway carriage windows and sliding side windows. The interior of the cabin is stained mahogany with natural wood color ceiling. Seating full length of cabin, and lockers under seats, cushioned with plush cushions throughout. Carpeted floor full length of cockpit and cabin. Decanter and glass racks fitted in cabin. Paneled and lined throughout with kauri pine stained and varnished. All fastenings and cabin fastenings of copper nails and polished brass knobs. Hooks, hinges, etc., solid brass 16-inch steering wheel on brass stand with Gipsy, and chain with wire phosphor bronze tillers, ropes and brass pulleys. The towing bitts



Puzzle No 1. Where Is This Splendid Harbor?

are of hardwood 4 by 4, one aft and one forward, with tow-rope guard aft. Launch sheathed with 12-ounce pure copper sheathing; sheathed on keel with 16 gauge pure copper, to protect keel from rocks. Rudder hangings of brass. The engine is an 11-h.p. Ferro, make-and-break engine, with K-W magneto ignition.

"The launch is finished in a plain, substantial manner to suit the requirements of the Fiji climate, and will be used as a tug and pleasure cruiser.

"The engine is suitable for a country like Fiji, as we have to depend on unskilled natives and Fijian drivers who have no knowledge of the workings and principles of the gasoline engine.

"On her trial spin she gave a speed of $7\frac{3}{4}$ miles per hour, which considering the weight of 8 feet 3 inches beam is very satisfactory."

Suva, Fiji.

S. A. GRIFFEN.

HIGH-SPEED VIPER AH-HA

THE illustration below is of the high-speed Viper Ah-ha, for which the owner claims a speed of 31.9 miles per hour. The owner writes of her as follows:

"Enclosed herewith is a photograph of speed boat Ah-ha. This boat is fitted with a 40-60-h.p. Pierce-Budd engine, and is 20 feet over all, and, I believe, is almost a record boat for her length and power.

"This boat is the champion of Western Michigan, having defeated all other aspirants in a series of races terminating on Labor Day, last September. The boat has a record of a *real* mile in 1 min. and 53 sec. and on her last lap on the Spring Lake Motor Boat Club Course, which is exactly $6\frac{1}{2}$ miles long, completed the course in 12 min. and 43 sec. The course is quite irregular in shape, having five turns. Both the distance covered and the time made are authentic.

"The engine runs steadily at 1,800 r.p.m. and seems to increase its speed with each mile covered.

"I take pleasure in recommending the engine to any one requiring a high-speed, light-weight, reliable engine."

Detroit, Mich.

J. R. HARBECK.

TWIN-SCREWS FOR OFFSHORE WORK

YOUR favor received, in which you ask me to give you my reasons for preferring twin-screw engines for these long-distance racers. My experience has been that in every one of these races, there comes one time or several times when it is advisable to stop the engine and make some adjustment that will give greater efficiency or to correct some growing trouble.

My second reason is, that with twin-screws you get a shorter engine room for the same power; and as I never believe in having the galley or sleeping quarters in the engine room, unless forced to do so by the owner, you do not need the room at the side; except for the work-bench and lighting plant.

Your other contention that one wheel would be out of the water constantly in a seaway is quite true, unless you put your wheels very low and give your boat a deep draught. This shallow-draught idea is all nonsense on ocean racers. Your statement that you need more fuel with two engines than one is, of course, true, as I have found as a matter of practice that in boats from 40 to 70 feet, a single-screw engine has an efficiency of 5 to 8% greater than a twin screw; but with a properly designed twin-screw boat, it would not be more than 5% with a good clear flow of water to the propellers. The best argument I can give will be to send you the plan of a twin-screw 62-footer which I am now getting out which embodies my ideas of what a deep-sea racer should be. In summing up, I would add that by winging the weights out as you do with twin engines, the boat is steadier; two small engines are easier to start than one big one and, of course, the feeling of security with two separate and



Viper Ah-Ha, with 40-60-H.P. Six-Cylinder Pierce-Budd Engine, Owned by J. R. Harbeck, Detroit, Mich.

duplicate units, both engines and tanks, adds a good deal to the morale of the crew. The run of the twin-screw boat should be designed entirely differently from that of a single-screw boat, and one reason of the loss of efficiency on some twin-screw boats is, that the designers have neglected to take into consideration the stream line to twin propellers.

J. MURRAY WATTS.

Philadelphia, Pa.

COCKTAIL

AM enclosing you a small photo of Cocktail tied up to a beach a few miles down our coast, at one of our favorite camps where fishing, bathing and hunting are good.

My old ship is still in fine condition, better than ever, and every year brings improvements. This year, besides getting the engines repaired by Mr. Graef at Trenton (at your recommendation), I put in a third engine, converting her into a triple-screw cruiser! The new engine is a 12-h.p. Lathrop and this also has done good work. For making landings, getting around in crowded places, etc., I use the center engine only, which is fitted with reverse gear, and once started on a long trip the wing engines



Triple-Screw Cruiser Cocktail

only are used. I find this much handier and it is also much safer for outside work. As nearly all my cruising is outside and I always take my wife and two little girls along, this is important. Another improvement last year was a tender and davits, which came in very well on our cruises.

E. A. BROOKS, JR.

Guantanamo, Cuba.

HIGH-SPEED V-BOTTOM

The accompanying illustrations are of a fast 22-foot V-bottom runabout, designed by W. H. Hand, Jr., for Nelson Doubleday, of New York. Her engine is a three-cylinder, two-stroke 15-h.p. Erd, which drives her at a speed of 22 miles per hour. The owner is most enthusiastic about the performance of the engine, as shown in the following extract from his letter:

"The engine, I think, is a real wonder. I have used it almost continually this Summer with perfect results. The day of the International Motor Boat Races Mr. Hand and I ran from my place here over to Larchmont (a distance of 20 miles), at top speed, about 22 miles an



V-Bottom Runabout at Full Speed

hour, and the engine didn't miss an explosion, and the same coming back.

"That same day we also ran around Long Island Sound and around Larchmont Harbor, bringing our mileage for the day up to about 60 miles, and not a miss or a falter. I think that record with that boat would be hard to beat."

THE SCRIPPS CRUISE

WHILE admittedly one of the finest existing sports, high-speed power-boat racing has passed out of the reach of the majority of us. The winning speed boat of to-day represents an investment of anywhere from \$35,000 to \$50,000 and a mighty risky investment it is at that, for the champion of to-day is at any moment apt to become an "also ran." Once defeated the high-speed racer is good for little more than it will bring as junk.

There are but few engaged in power-boating who can keep up the pace set by the owners of Pioneer and Dixie, yet there are thousands upon thousands of enthusiasts who are anxious to match their craft if but given an opportunity to meet their competitors on an equal footing. These latter are composed of men who usually can afford but one boat, and this one must serve as a family outfit suitable for other uses than pure racing.

In the past there have been but few contests held which would give the cruising or general utility boat a fair show, the natural result being that competitive events have been practically restricted to the few men with thousands of spare dollars to risk in the sport each year.

It was with the idea in view of creating a more democratic event that I donated to the Great Lakes Power Boat League the Scripps Trophy, to be competed for each year



Turning at Full Speed

by boats of the cruising type, the winning outfit being that boat which should complete the specified cruise with the most creditable showing as to reliability and consistency.

It is the intention to conduct the contest along the same general lines as the Glidden Tour for automobiles, and unless I am greatly mistaken it should soon assume the same prominence in the power-boat world as this well-known tour bears to the automobile field.

The Scripps Cruise will by no means be a "race," in the regular sense of the word, as speed will absolutely be no factor in the final results. Reliability alone will decide the contest, and hence the man with the \$30,000 300-h.p. cruiser will have no advantage over the man with the little \$1,000 30-footer with a 10-h.p. engine.

There is another phase of the question which is of interest. The average high-speed racing machines are very delicate propositions. In their construction everything which tends toward simplicity, safety and long life is sacrificed for speed. The hulls are freaks of lightness, each reflecting the extent to which its particular designer is willing to stretch his conscience in abandoning the accepted methods of construction which produce a safe boat; the power plants in the majority of the successful boats are especially designed affairs of the most intricate and delicate type, demanding expert attention every minute of the day, and necessitating a high-salaried crew—in short, they represent a distinct field of development in both hull and engine construction,—a field which in no way contributes to the knowledge of the general public, and little, if any, to that of the manufacturer who is endeavoring to build outfits of a commercial practicability, and which are suitable for the use of ordinary mortals. Cruising boats, on the other hand, represent the latest developments along the line of safe and practicable design as to both hull and engine, and it seems to me that these

boats engaged in a contest such as the Scripps Cruise promises to be, will create a source of practical and accurate data, upon which the manufacturers may draw when designing their new models or improving their present line, and to which the power-boat men may look for reliable and unbiased information when planning their outfits for another season.

Unlike the Glidden Tour, the Scripps Cruise will not be conducted along the lines which will tend to make it an arduous task rather than a pleasure. True, the rules will be somewhat more strict than those of most of the long-distance contests held to date, but in compiling them the committee has always kept in mind the comfort and pleasure of the contestants. The daily runs will probably not exceed 75 miles, which will permit even the slowest boat to perform its daily task at leisure. Furthermore, it is planned to make the stops, each night, at or near some yacht club, and in each case either the committee or the local organization will provide some sort of entertainment. In this way the man who is spending his vacation on the cruise will be assured of as much if not greater enjoyment than he would ordinarily be able to crowd into the two weeks which he has free.

It has been very gratifying to note the cordial manner in which the proposed cruise has been received by the various local boat clubs throughout the Great Lakes. Those situated along the proposed route have assured the committee of their most hearty co-operation in endeavoring to make the contest a memorable one. Each one of these organizations is preparing to outstrip itself in giving the contestants a rousing good time, and this fact alone should serve to create a more intimate comradeship among the boating fraternity.

Considered as a whole, the cruise should prove a great success provided it is accorded proper support at the

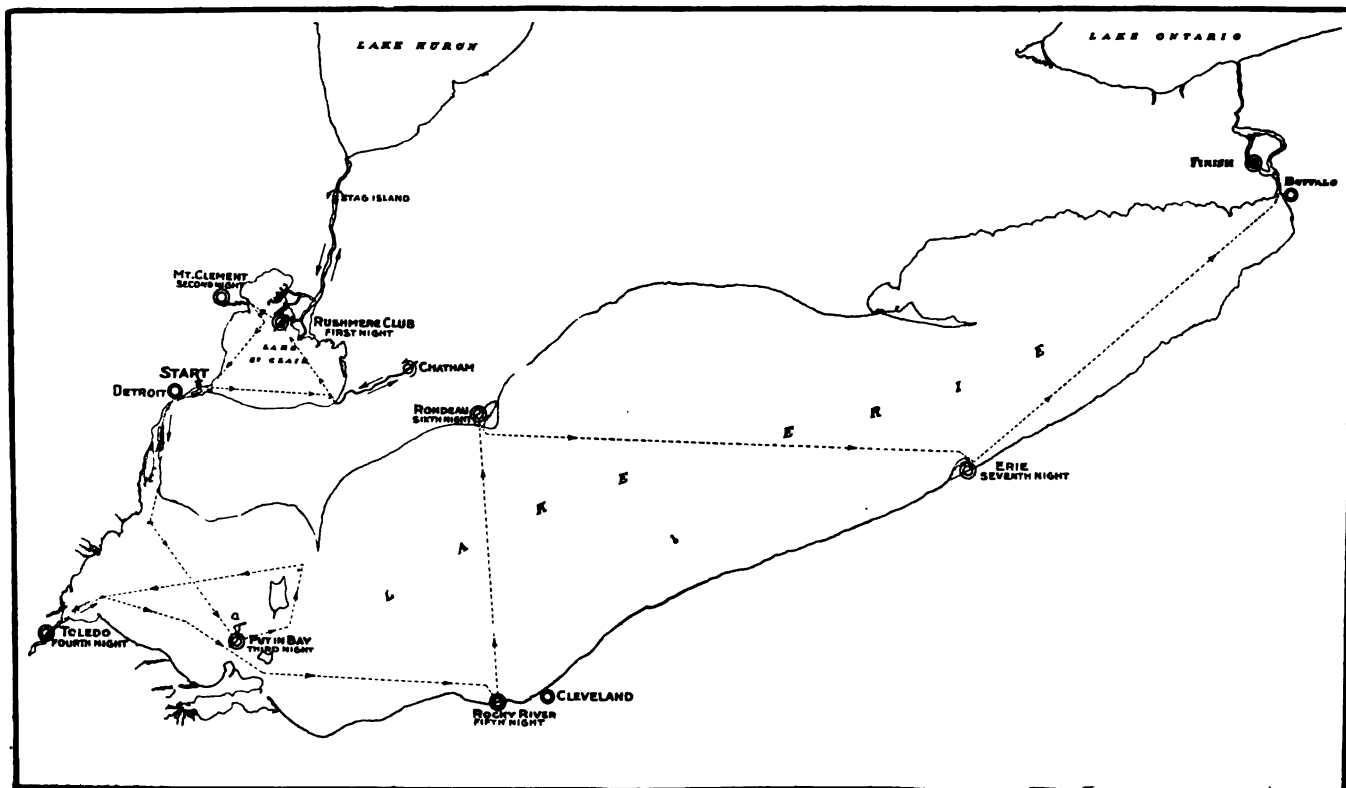


Chart Showing Route of the Scripps Reliability Cruise

MAPLE LEAF III



Launch of Sovereign, 165 Ft. O. A. Built by Gas Engine & Power Co. and C. L. Seabury & Co. Con., with Guaranteed Speed of Thirty-Five Miles per Hour

hands of cruising boat-owners, and I am sure we can count on their co-operation. Any member of a recognized club of either the G. L. P. B. L., the W. P. B. A. or the A. P. B. A. is eligible, and I should like to see boats entered from all over the country.

Detroit, Mich.

W. E. SCRIPPS.

[The cruise starts on August 7th from Detroit and ends on the 14th at Buffalo, the daily runs averaging 77½ miles, the total distance covered being about 620 miles.—Ed.]

ENCLOSED find a photograph of Maple Leaf III, Mr. E. Mackay Edgar's new hydroplane challenger for the British International Trophy. At full speed she leaves a cloud of mist, rather than spray, about 10 feet high, so great is the velocity. The Thornycrofts tell me that she has actually attained 49½ knots (57 miles an hour) and was not full out.

She is just under 40 feet over all by 9 feet, and is constructed of mahogany, three skins forward and two aft, on similar lines to Miranda IV, from designs by J. I. Thornycroft & Co. She has a hard chine forward, but, unlike Miranda IV, her upper body has an extreme tumble home over all, making her rather a pretty craft.

Two 12-cylinder V-type engines, 7-inch bore by 7½-inch stroke, are fitted, driving twin screws, each engine being of 400-h.p., and were designed by the Orleans Motor Company. Her displacement when at rest is five tons, but at speed she lifts about 18 inches out of the water.

London, England.

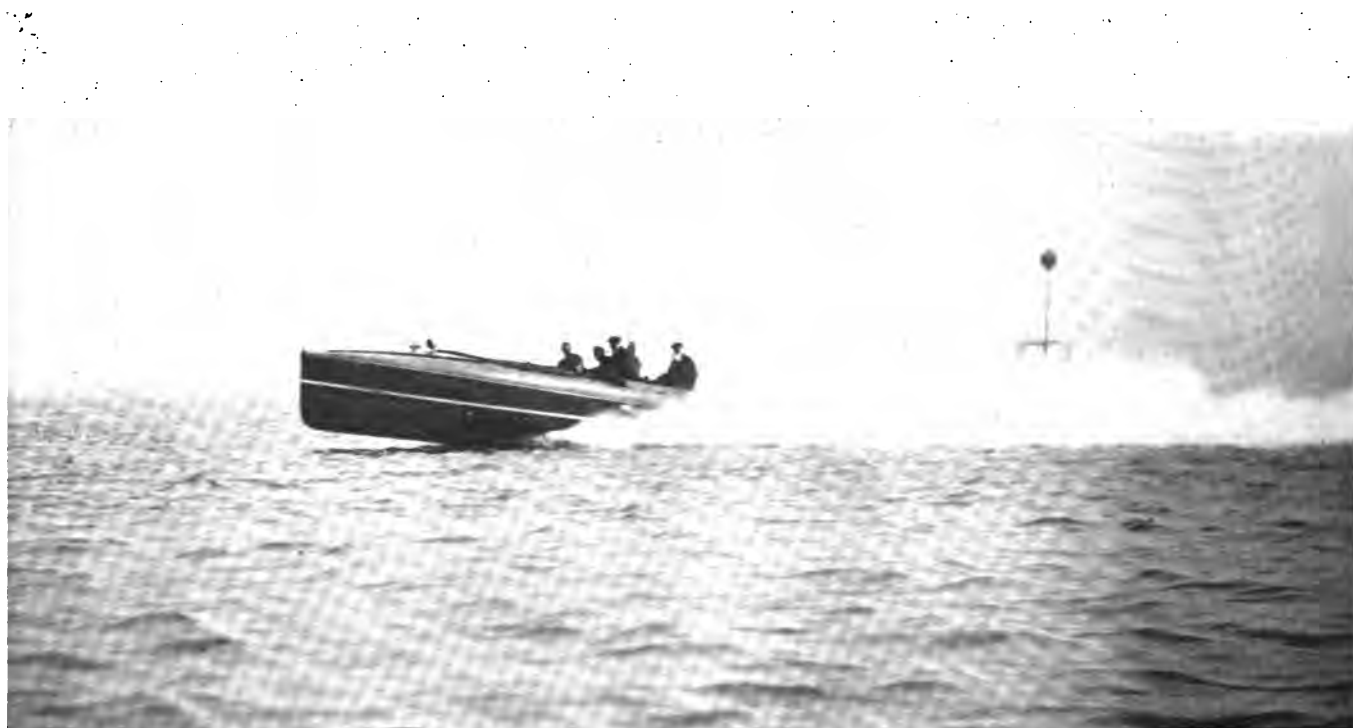
J. RENDELL WILSON.

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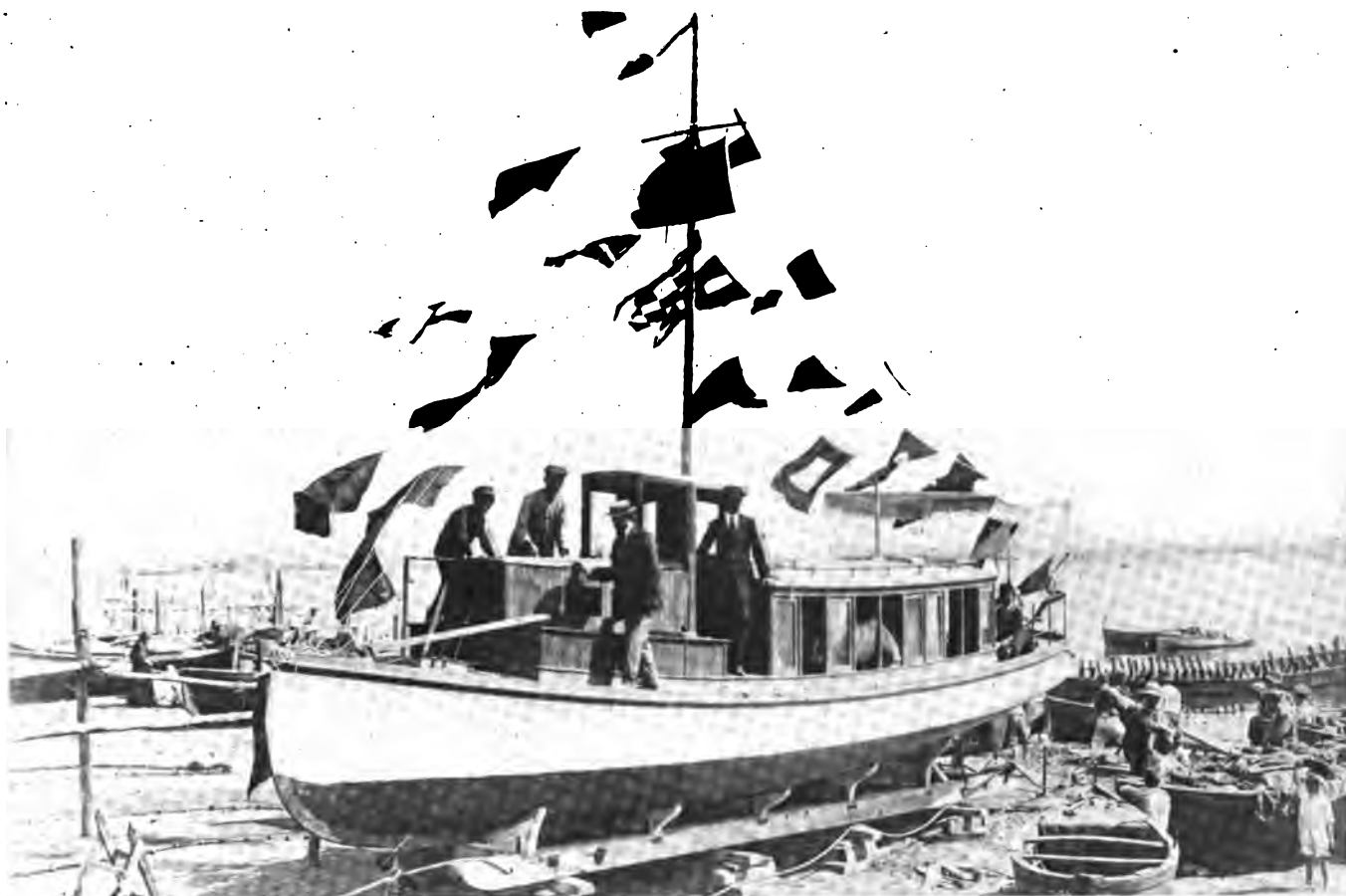
ITALIAN POWER CRAFT

THE boat shown on the opposite page is a product of the handicraft of the power-boat builders of Naples, Italy. The photographs were sent us by V. Cardillo di Vincenzo, who writes of the boat as follows:

"The enclosed photographs are of a cruiser which was built here, and for which I have supplied the engine. The boat is Anna, 40 feet over all by 8½ feet wide, with pilothouse, cabin, with four berths, lighted by electricity, and equipped with a 14-h.p. heavy-duty Dan engine fitted with reversible blade propeller. We anticipated a speed of 8 miles per hour with this engine, but were agreeably surprised to note that she easily obtains the speed of 10 miles per hour."



Maple Leaf III, at Full Speed



Power Cruiser Anna. Built by V. Cardillo di Vincenzo Naples, Italy

NORWEGIAN POWER CRAFT

ON the accompanying page are shown a number of Norwegian power craft which makes evident the fact that our friends across the water are decidedly up-to-date as regards gasoline engines and boats. The following description, in his own language, by our correspondent brings out very prominently the fact that American engines have established a decidedly strong footing in Norway:

"Sissen is one of our finest boats." Her owner is Mr. Hans Brun, Kristiania. She is 35 by 7 feet, built of Norwegian pine with mahogany finish, constructed on fine lines. She is a very roomy and seaworthy boat. Forward w. c. and lavatory, then a fine main cabin with berths, sideboardshelves, lockers, folding table, etc. The engineroom, where on the one side is arranged an ice-box and pantry and stove. Astern is a roomy cockpit with seats and lockers below. Nice leathercovered cushions and linoleum on the floor. Electrically lighted. The engine is a 16-20-h.p. four-cylinder Regal with magneto-double-ignition, self-starting apparatus and automatic oiler. Speed 9 knots.

"Thor is a seagoing cruiser belonging to Mr. Th. Andressen, Fredriksstad. This boat is 36 by 7¾ feet, built all over of oak and of a very comfortable and seaworthy type. Forward is a compartment for w. c. and shelves for different marine stores. Next is the engineroom, where the controls for maneuvering are carried, and behind this is a great main cabin with comfortable berths and cupboard, swing-up washbasin, sideboard, folding table, etc. Electrical light. The engine is a 12-h.p. double-cylinder Regal, last type, with magneto ignition and automatic oiler; her speed is upwards of 8 miles per hour.

"The Meteor, owned by Consul N. Wiborg, Kragerø, is also a handy, seagoing and fine boat. She is 28 by 5¾ feet, built of mahogany throughout, with roomy main cabin, covered engine and large cockpit. The engine is a 16-20-h.p. four-cylinder Regal, with last improvements, and the boat does the respectable speed of 10 miles.

"A pretty little craft is Mr. Buhre's Odd. It is but 23 feet, but has a cosy little cabin and a roomy cockpit. It is, practically speaking, the ideal of a little, cheap familyboat. The engine is a 4-5-h.p. one-cylinder Regal; speed 8 knots.

"In this season increased interest for faster boats has been faced. Two very successful boats of this kind are Trip-Trap and Glenly with 45 and 40-h.p. automobile engines. Trip-Trap is the fortunate winner of this year's Father's Cup and is therefore officially Norway's fastest motorboat. She is 26 by 5½ feet, built of mahogany throughout. The engine is built all over like that of American racers, and all controls of the boat are focused outside on the cabin's wall. The engine is a four-cylinder and the weight is but 270 kg. The speed is fully 14 knots.

"A boat such as Express is built as an express boat for an industrial concern in the lake district Telemarken. She is 27 feet long, built of Norwegian pine and mahog-

any and equipped with a 24-h.p. Sterling engine. She is specially built for freshwater and with a view to the possibility of collision with logs drifting beneath the surface of the water. At the trialrun this boat was propelled at 12 knots across heavy floating logs without damaging hull or screw.

"No. 7 is a type of boat built on very fine lines and was delivered to Mr. Aug. Hanson, Drammen. She is 25 by 6 feet, built of oak and Norwegian pine. The engine is a 4-5-h.p. Regal, practically and nicely covered by an oakcasing on whose backside are arranged regulating apparatus for the engine. This year we have delivered six of this kind in the size 20-26 feet.

"No. 8. A type that seems to be very popular, is the motordinghy, of a construction adapted for the engine, fuller astern and with high freeboard. It has the advantage of being very cheap, affords ample accommodation and is an excellent seaboat. A series of these boats have been delivered in this season, partly to sportsmen and partly to those that will have a cheap, staunch and steady boat. The engine is 3 or 4-h.p., speed 5½-6½ miles. Our sailors, who formerly wanted to hear nothing about the gasolineboat, now begin to admit that it can be used to much advantage in the harbor service, and have partly procured motordinghys.

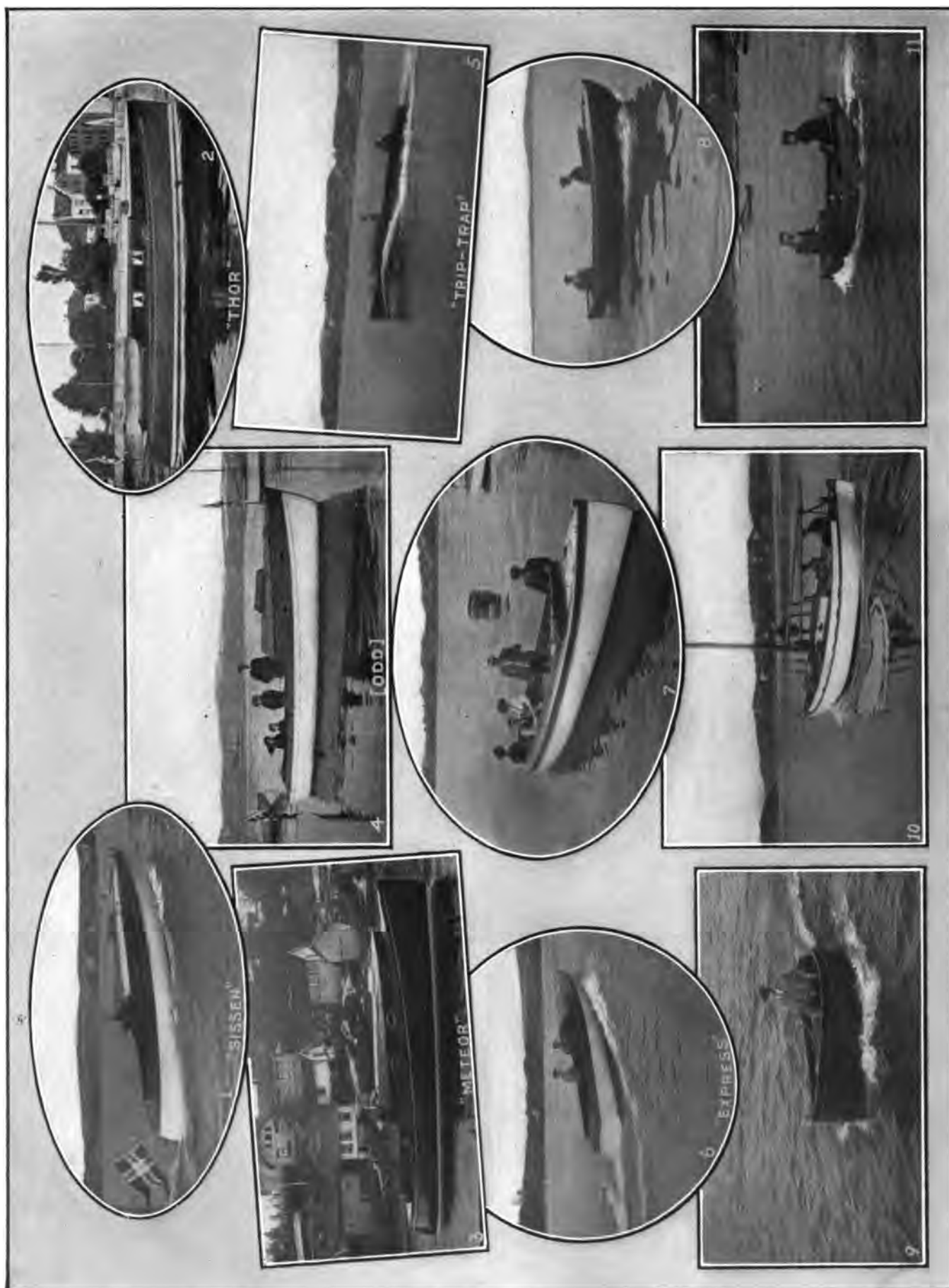
"An excellent representative of these is a 12-foot dinghy delivered to Mr. Alfr. Larsen's sailing yacht, Magda VII. This little craft, No. 9, is built of mahogany throughout and equipped with a little double-cylinder engine 4-h.p., fitted out with copper-mantled cylinder and aluminum bedplate. The weight is but 50 kg. The dinghy is nearly to look at as a toy, but the powerful little thing easily tugs the big vessel in calm at a speed of 3½-4 knots.

"No. 10. Here you see a lugger of the old good type owned to the Norwegian Customauthorities and stationed at the port of Drøbak. Under the skylight aft is installed a 12-h.p. Regal engine, by the aid of which she is up to any situation. Vessels of this type are well suitable for pleasure trips, as they with these engines are very passable and under sail comfortable with many facilities under deck.

"No. 11. Owner, Det Nordenfjeldske Dampskibsselskab, Trondhjem. This craft is 22 by 5½ feet, built of Norwegian pine with oak mahogany finish. 6-h.p. two-cylinder Regal engine, speed about 8 knots, equipped with sprayhood and of very seaworthy and roomy construction. This boat is used by the said company's touriststeamers, which every Summer visit the Norwegian fjords as well as Spitsbergen.

"At the same time we can mention that the first steps have been taken for starting a Norwegian motorboatclub as a committee has assembled for drawing up regulations and making other arrangements for the establishing of the club."

The above described craft were turned out by the Maritim Co., Alf. Nielson, Engineer, Kristiania, Norway.



Boats Built by the Maritim Company, Kristiania Norway

TECHNICAL DETAILS OF THE BOATS AT MONACO

ROUGHLY, the hydroplane boats at the Monaco meeting can be divided into two classes: stepless, or semi-hydroplanes, and the more conventional step or "violin" type of boat. Practically all the former have been built by the French constructor Despujols, and comprise the little Hispano-Suiza, the three Gregoire boats, and one of the Labor craft. In all these boats a shallow displacement type of bow is used, with a practically flat bottom having the angles rounded off. At a moderate speed the bow rises entirely out of the water, the boat gliding on its flat bottom without any of the pounding which generally accompanies the step type of pure hydroplane. Although Despujols is the inventor of this type of boat, he has not abandoned the pure hydroplane, as is shown by the appearance of Clement-Despujols, one of the fastest racers, having a cigar-shaped bow, a deep step, and an absolutely flat bottom astern, the greatest beam being just forward of the step. Although having a smaller over-all length, Sigma-Labor is practically a duplicate of Clement-Despujols.

On the big English defender Maple Leaf III, designed by Sir John Thornycroft, the step is much more shallow. But there are other differences, the bow being of the pure displacement type, exceedingly fine, but quickly flaring out into a broad bottom which is not flat, but incurved from each side toward the center. It is only after the step that the bottom becomes quite flat, the freeboard being very considerably decreased toward the stern. Although Miranda IV is from the hands of the same designer, she is quite distinctive from Maple Leaf III; her bow is practically the same and her bottom amidships

only differs by being less incurved; but the step is not so deep, and instead of the boat having as much beam astern as amidships, her lines are brought in to a very fine point at the stern-post.

In the German semi-hydroplane Lurssen-Daimler, the bow is of the shallow displacement type quickly merging into an absolutely flat bottom without any step, and with the same beam for at least three-quarters of the length of the boat. From the rear of the cockpit the deck is swept down until it meets the bottom of the boat in a fine point at the stern. Despite the somewhat primitive nature of the hull, it proved itself remarkably capable in rough water.

Some originality has been shown in the design of La Fleche, although it must be admitted that the boat has not proved altogether up to expectations. The designer has mounted a displacement type of boat on a large float having a depth of about one foot, narrowed and brought to a point in front, and broken by a deep step. The boat portion being very narrow, the top of the float forms what may be termed a deck on each side. To avoid the pounding to which hydroplanes are usually subjected, the inventor has made the forward lower portion of the float pivoting and has fitted air buffers between the lower and the upper portion. Thus, the blows received by the surface in contact with the water are not transmitted to the entire boat. As a preliminary defect it was discovered that the flat deck on each side of the body only served to scoop up water and draw down the bow. To overcome this the forward portion of the float was planked up to the sides of the float mounted upon it, with the object of throwing off whatever water may be shipped at low speeds. Naturally, at high speeds it was supposed that the nose of the boat would rise so much that there would be no tendency for the float to ship water.

It is a common practice among French builders to



Propellers and Rudder Arrangement on Maple Leaf III



La Fleche, a French Hydroplane, with Spring Step

place the rudder considerably to port, and only in a very few cases was it carried in a central position. On the English boats, on the other hand, the rudder was always carried centrally. Maple Leaf III employed two rudders, united by two connecting bars. Another peculiarity of this boat was the carrying of the extremity of the propeller shaft in a bearing on the base of the rudder post. This brought the screw directly behind the rudder, and of course in the same vertical plane. A similar arrangement was adopted for Miranda IV, also a Thornycroft boat. So far as Maple Leaf was concerned, the arrangement did not prove satisfactory, for after two days' racing the bracket broke and the propeller made a hole in the bottom. It was evident that the ten feet between bearings was far too much.

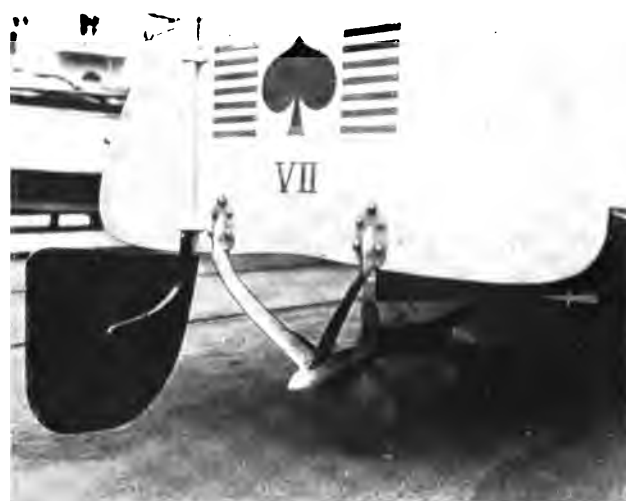
With a very few exceptions the engines seen at Monaco were of the automobile type. This applied not only to the smaller units, where the power plants were exact duplicates of those used on cars, but also to some of the large models. Thus, although having 24 cylinders with a bore of $7\frac{1}{4}$ and a stroke of $7\frac{1}{2}$ inches, the Wolse-



Rear View of Gregoire Four-Cylinder $3\frac{1}{2}$ by 12 In. Engine Built for Gregoire X

ley-Siddeley engines aboard Ursula were of the pure automobile type. The engines really consisted of four sets of six, united up to form a tandem set of 12 cylinders each. The cylinder head was of the L type, with valves down the inside, and operated from below. Double ignition was employed in order to allow of starting on the switch, and the air for the carbureter was drawn in through the crank-case, in order to heat it. The exhaust, consisting of a separate pipe for each engine, was passed fully astern, discharging under water and being completely muffled. Practically no changes have been made in the engine for the past two years, and the only change in the boat has been the deepening of the rudder.

Maple Leaf, with her 800-h.p. engine having 24 cylinders of 7 by $7\frac{1}{2}$ inches bore and stroke, was one of the few not entirely on automobile lines. The engines comprised two distinct units, mounted side by side, and each consisting of 12 cylinders in V, slightly offset in relation one to the other, in order to avoid the forking of the connecting-rod ends. These engines, built by Astell, of London, had exhaust valves below and intakes immedi-



Stern View of Pk-Ae VII, Showing Offset Rudder

ately above them, operated by overhead rocker arms. A central exhaust pipe ran down the space formed by the angle of the inclined cylinders, being brought together aft of the engines and forming a single outlet astern. An ample water-jacket surrounded the whole of the exhaust pipe. There was an independent carbureter for each engine, mounted at the rear of the engine and connected up to an endless water-jacketed pipe passing before each of the twelve intake ports and returning to the carbureter. Each engine, too, had its own gasoline tank, carrying 60 gallons, and carried fully aft. The pressure on each one was kept up by a pump worked off the engine, with a hand pump in reserve. Two high-tension magnetos supplied the current for each engine, each of the four magnetos providing for six cylinders. Although the magnetos were of the double distribution type, made by the Bosch Company, and allowing of starting on the switch with one set of plugs, the engines were almost invariably started by means of a little single-cylinder engine carried in the bow of the boat, and connected up to the two



Stern View of Miranda IV, an English Hydroplane Designed by Sir John Thornycroft



Clement-Despujols at Speed, Note Depression in Sides of Hull

crank-shafts by means of a single belt. When the one-lunger had been started, the belt was shifted over to connect it up to the two big machines. A clutch was used between each engine and the propeller shaft, but there was no reversing gear.

Practically all the other engines were of the automobile racing type or special light-weight aeroplane engines. A good example of the former was to be found in the three Gregoires, one of which had a bore of $3\frac{1}{2}$ inches for a stroke of $7\frac{1}{4}$ inches, and the other two the same bore for the extraordinarily long stroke of $11\frac{1}{4}$ inches. These two latter, the latest type produced by the firm, had their valves inclined in the head at an angle of 45° , and operated by a central overhead cam shaft, worked from the main shaft by bevel gearing, a vertical spindle with universal joints, and enclosed bevel gearing. The peculiarity was the use of two exhaust valves per cylinder, each rocker having double arms and opening both valves at once. Together the two exhausts had an area greater than that of the cylinder bore. The intakes, on the opposite side, were four in number, and had a diameter of a little over 3 inches, or half an inch less than the bore. The crank-shaft was carried on three very large ball-bearings, all other bearings being plain. The magneto, a high-tension Bosch, fired two spark plugs simultaneously, and in addition had a double distributor



Gregoire IX. Note Circular Rudder Yoke allowing the engine to be started on the switch by the use of storage batteries.

The several engines used on the Labor boats were more of the aviation than the car type, being distinctive by reason of their long stroke and very low weight. Thus, the four cylinders were cast in one block and had a bore of 4 7-10 inches for a stroke of $9\frac{1}{4}$ inches. Valves were on opposite sides, but in order to decrease the area of the combustion chamber had their stems very much inclined outward. The crank-shaft was carried on three large ball bearings, connecting-rods were tubular, the pistons drilled to remove as much metal as possible, and all timing gears exposed and made as light as possible. Owing to the long stroke it was found necessary to stiffen the tops of many of these engines by placing a couple of irons across the top of the cylinders and bolting them down to the engine base.

On Clement-Despujols, the fastest of the French boats, the engine was a four-cylinder cast in pairs, with a bore of $7\frac{1}{2}$ inches and a stroke of $8\frac{1}{4}$ inches. The valve design was similar to that of Gregoire, but instead of two, there was only one exhaust valve per cylinder. To decrease weight the walls of the cylinders were copper-jacketed, but the upper portion and the heads had integrally cast water spaces. This engine had never been designed for the boat, and indeed had been in use for several months on an airship before it was hastily transferred to the hull. In noting the tendency toward exceedingly long strokes, it must be remembered that in all cases the boats were run under a limited bore rule, stroke being unfettered.



Tugs Puerto Perlas and Wawashon, Equipped with 27-H.P. Wolverine Engines Owned by the Port Perlas Banana Co., Nicaragua Towing 7,000 Bunches of Bananas

THE OLDMAN'S MAIL BAG

SOME LETTERS FROM MEN OF HIS CREW WHO ARE STANDING BY TO KEEP THE OLD PACKET EATING OUT TO WINDWARD

FROM ONE OF THE OLD GUARD

I never had the pleasure of meeting you, but am delighted to receive your little typewritten note in regard to work for your paper.

I wish to say right here that for twelve years back I have been an ardent admirer of THE RUDDER, and every chance I get I put in a good word for it, both in regard to the advertisements and the owner of the book. I am in a line of business closely connected with many of the lines as advertised in THE RUDDER, and I have never met a man anywhere, even remotely connected with salt water work, who is not a strong friend of you and your paper; and wherever I go I find that both the paper and its owner are held in the highest respect and esteem.

I have called at No. 9 Murray Street several times, hoping to have the pleasure of shaking hands with you, but have never been successful in finding you in your office. I happen to be acquainted with your Mr. Bieling, also with Mr. Graef and Mr. E. B. Schock, formerly of your staff.

When I come across anything in the paper that impresses me I lose no time in writing people and telling them "I saw it in THE RUDDER," and I have bought goods in this way from M. W. Fogg, Charles Durkee Company, The Alcohol Utilities Company, The American Ship Windlass Company, Jordan Brothers and several others which I do not happen to recall.

Again, I have just returned from a trip in Cuba and have promised to send some friends there copies of my paper after I have finished the same.

Now, Mr. Day, I hope you will pardon this long trespass on your time, but if you could hear the good words spoken by every one who knows either you or of your paper, you would soon see that you have friends by the thousands. I do not recall seeing a man who knows enough to sail a boat but what reads your paper either directly or through friends and again possibly yacht clubs. "If you see it in THE RUDDER, it's all right," and which applies either to the reading columns or the advertisements.

Hoping some day to have the pleasure to see you, if only for a few moments, and assuring you of my highest esteem and friendship, I beg to remain,

Yours sincerely,

GEO. H. OLNEY.

* * *

A HAIL FROM ST. JOHN

I have yours with reference to buying from RUDDER advertisers and I can assure you that I shall help the old ship along as much as I can; but please bear in mind that as yet Reciprocity has not taken in boats or fittings and that a duty of 35% makes quite a difference when you are fitting out.

However, the customs don't touch correspondence and if I can contribute anything in the nature of pictures or descriptions of races that will help along, please let me

know. The only growl that I can make as regards THE RUDDER is that I would like more sail and not so much power, being an out-and-out windjammer; but as you say, if the designers are not turning out the boats you can't describe them.

With best wishes for health and happiness,

R. P. CHURCH.

* * *

FROM BRITISH COLUMBIA

Having received your request to return to your ship to help man, I will say that if you look up your ship's papers you will find the name of a new sailor by the name of Alfred McKinnon, Vancouver. The lad took such interest in your magazine that I subscribed for THE RUDDER for one year for him, and we both live in the one house, so I see the courses that THE RUDDER has sailed every month.

Your offer to me to take the trip for three years is very generous and I may accept the invitation a little later.

We have a great many pleasure craft out in this wild and woolly country and we have some very good races in the summertime. The last week or so the weather has been beautiful and warm and there has been a great deal of stir along the water, getting the boats into commission for an early season. I don't suppose there is a more beautiful country in the world for yachting than ours is, for there are hundreds of miles of inside waters where the smallest craft can travel. Hoping to return to the ship RUDDER in the future and thanking you for your generous offer.

And with best wishes to you for a fair wind and fair tide that you may handle the ship easily, I remain,

Yours very respectfully,

GEO. J. HIBBARD.

* * *

FROM THE RUDDER'S BIRTHPLACE

This is to acknowledge receipt of the "Warm Talk" from the Oldman.

I have been elected chairman of a committee that has the construction and equipment of a new Class R boat in charge, and I have to-day placed an order with Pigeon-Fraser Company for hollow spars. Another order with Wilson & Silsby for sails, and I intend to buy my rigging from A. S. Morss Company and C. D. Durkee, all of whom are RUDDER advertisers. From this you will observe that I am already "Lending a Hand."

With best wishes for your success, I am

Yours very cordially,

F. H. HERRICK.

* * *

FROM NEW YORK

I am in receipt of your very courteous and cordial letter of April 7th and will be glad to assist you in every way possible, as requested. I will keep my eye open for new firms advertising and will call on them for information from time to time.



One of the Oldman's Most Valued Correspondents, Mr. H. Sellegger, Java, Netherland East Indies

For your information, and, I believe, encouragement, I would like to advise that on several occasions I have been instrumental in getting some of my doubting friends to obtain their goods from our advertisers. In every case they have expressed satisfaction at their treatment, and have returned for more, which I think is a good enough answer.

With kind personal regards and wishing you the best of luck for the coming year, believe me to be,

Yours very truly,
W. B. HARDING.

* * *

FROM MIDDLETOWN, CONN.

In accordance with a vote of the Club passed at the meeting last evening, I take pleasure in enclosing to you a membership card certifying to the fact of your election as an honorary member of the Middletown Y. C. Under separate cover you will find a copy of the Constitution and By-Laws and list of members.

With best wishes for your prosperity, and for success in the spread of that "yachting spirit" for which you so earnestly work, believe me,

Yours very truly,
HAROLD A. WILLIAMS,
Secretary.

* * *

A HAIL FROM SIBERIA

I promised to let you know how the "Spray" arrived here, and as it came to hand last evening I do so at once. It was not as badly damaged as the "Half Moon" was last year, but in one or two places little spots of color have flaked off under the creasing. Next year if you issue such a picture, why, I'll have it sent in a piece of galvanized 2-inch piping, that it may come without being squashed. The German and English paper cylinders which we receive here with drawings in them, are generally formed of a very hard paper material impregnated with glue or similar binding material, which renders them almost as hard as iron and next to impossible to squash in the post.

"Spray" is, anyway, a fine picture; the coloring is ex-

quisite and is just the sort of sunsets we get here in late Summer, the orthodox tropical sunset. The original must be a very fine painting indeed and worth a lot of money, too. I'd give half my years to be able to make such a picture.

The portrait of yourself in February is an A-1 production and if I may be allowed to say so, very much as I pictured you. It is also, I should say, a very characteristic portrait of the man. It is all character, the light of Day from start to finish, strong and masterful, as I should expect to find in one ever watchful and strenuous and who has done so much to make yachting what it is to-day with you in America. I hope the recompense to you has been commensurate with your efforts; but in my opinion no reward ever can be and no amount of honors can adequately repay the debt of the present and rising generation to such a world-wide benefactor to all who are in any way concerned in yachting and boating, commercially or for pleasure. The contrast between it as you found it and as you will leave it to posterity, must be for you the happiest contemplation in your waking hours.

With regards, trusting the present year will prove better than any preceding, for you and all your energetic helpers, I am,

Sincerely yours,
HENRY GEORGE READ.

* * *

HONORS FROM OREGON

At a recent meeting of the Oregon Dinghy Club the commodore of that crew of buccaneers took the liberty of shanghaing your name in on the articles as an "honorary member," in token of his appreciation of one who has done and is always doing so much for the finest sport of all.

The Oregon Dinghy Club is at present a small craft, but will most likely, with good seamanship, attract some attention by and by. Its specialty is one-design racing in small boats. Little craft that can pass under the bridges of the Willamette River at Portland, 18 feet over all, is the largest craft we have at present. Cat-rig sail limit 229 square feet.

With cordial greetings, I am,

H. F. TODD.

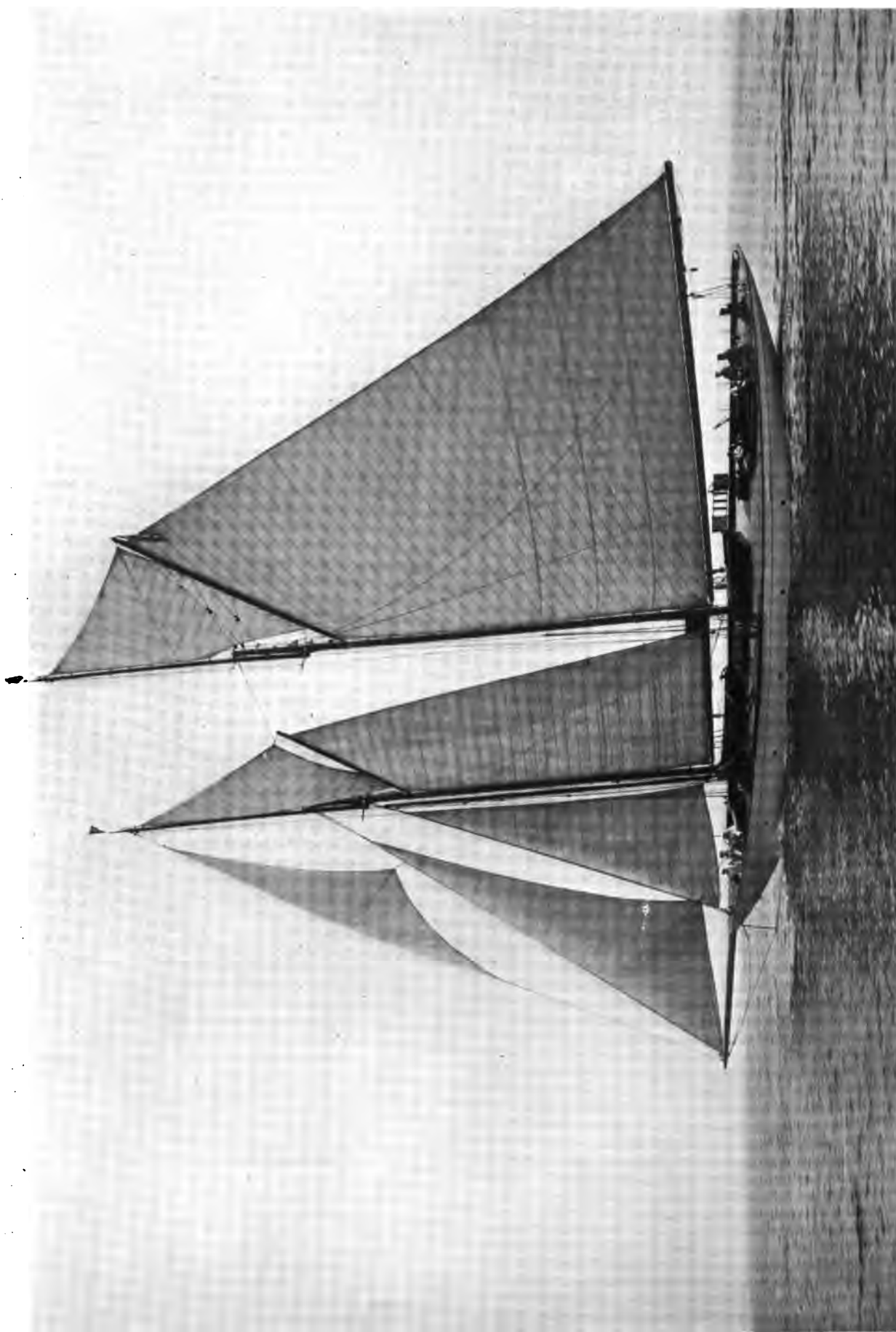
* * *

A HAIL FROM CANADA

Your call for "all hands" to help the advertisers reached me recently, and you can count on me to "bear a hand" in "standing by the Oldman" in this respect. I agree with you in what you say, for as skipper of the old, staunch packet ship RUDDER, you have had some hard traverses to work, and to skipper the craft as you have done, needs a weather eye lifting to wind'ard all the time, and a short watch below. However, it is my wish, and that of all my shipmates here for'ard, to see the "Oldman" have a "spell oh!" and to see him get a chance to work "Tom Cox's Traverse" (or two turns around the long-boat and a pull at the scuttle-butt).

As sailors say, you have earned a well-deserved lay-back in that paradisaical spot known as "Fiddler's Green"—where all the old skippers can rest "seven miles to lee'ard of Tophet, where the drinks and smokes are logged, but never paid." For a man to "work hard, live hard, and die hard, and go to h—l after all, 'twould be hard indeed." With every good wish to the old packet RUDDER and her bully skipper, I remain,

Respectfully,
BILL SPARBLOCK.



Ranger. 80 Ft. o. s. a. Owned by Henry P. King Beverly, Mass.

ROUND THE CLUBHOUSE FIRE

THIS is the twenty-first birthday of THE RUDDER, and instead of receiving congratulations I am going to offer them. To all the old hands greetings. We've weathered many a gale together and all in all made a very fair passage of it. Just recall what the sport was twenty-one years ago when the wee, timid first number peeped out like a crocus, half afraid that the next frost would nip it, and what the sport is to-day with a big brawny number like this looking out for its interests the wide world over. I don't think any level-headed man will deny that THE RUDDER has been the principal factor in building and extending the sport; that THE RUDDER has inspired and nurtured the present yachting and that it has done more to make active, honest and skilled yachtsmen than all other things put together. But it never could have accomplished the splendid work it has if it had not been supported and assisted by thousands of yachtsmen, by the designers and builders and by the advertisers. And I want on this its twenty-first birthday to thank those who have stood by and helped handle the old packet. May we long voyage together, and find fair winds and smooth seas.

* * *

But the chief glory of THE RUDDER is that it has become something more than a periodical publication—it has developed into an institution. An institution having an universal influence and world-wide powers, one that not only directs but builds, spreading knowledge and love of sport into every land where water flows and wind blows. This it could never have done if it had been conceived in a spirit of commercialism. But it was builded on a love of the sport, and it is that love which has inspired and directed its course. Itself and its followers constitute an universal republic, and in this it is unique as a publication. I know of no other of which the same may be said. It is the handbook of all nations, the fire-side companion of all ranks; it lies on the table of the palace and the bench of the workshop. It has interested, enlightened, taught and amused men of every civilized race. It has apparently satisfied everybody except the man who designed, launched and skippered it for so many years. He still looks forward nervously anxious for the day when it will be his good fortune to possess the means to make it what it should be, and what in his dreams he has often pictured it,—the most entertaining and beautiful magazine in existence.

* * *

Now having turned that turtle let's go ahead and dig up some eggs. If I could only remember what I forget it would be much easier to sit here and spin this yarn. There was something foul of my hawse for several days, but it seems to have gone clear, and drifted clean out of sight. Somebody was to have been ridden down, for something, but, bless me, I've forgotten who and what. The other night I dreamed that we were sailing over Niagara Falls in a boat designed by Charlie Mower and that he was on board. Just before we struck the edge of the precipice I was giving him the devil for taking and putting on my rubber boots. Getting my feet wet was what filled me with fear, the expected plunge was nothing. In life as well as in dreams it is the little things that

worry us most. Like the man who asked permission to take off his waistcoat before he was shot as he did not want it spoilt with a bullet hole. But just at present I would gladly have my waistcoat and all the rest of my gear honeycombed if I could escape the volleys of letters that have been fired at me for the last six months. If I've missed answering yours just pass along a bit of forgiveness, for it slipped past while I had my weather eye on the luff.

* * *

The other day I saw a book entitled, "Are the Dead Alive?" If somebody would only write a book and call it, "Are the Alive Dead?" I would gladly buy a few copies and send them to some clubs and associations whose names are on my list. Especially the associations. The associations seem to think that the only reason for existing is to associate, and when they have done that they have done all that can be expected or asked. A few reams of gaudy notepaper, a long list of officers, a year book and an annual meeting, and the whole bill is played. The idea that they are expected to inspire, direct, encourage, foster and record the sport never seems to worry them. What an association should be is a centralized body, with the inclination, power, and zeal to take hold of and direct the branch of the sport in which its component members are interested. It should have and maintain an office of record and should receive and record all measurements made under its rules, keep a record of all races, and see that such records are correct. These records should be open and accessible to the public as well as members of the association and should form a permanent standard of comparison. This would do away with false measurements and lying records and do much to aid in increasing and popularizing the sport.

* * *

Several years ago a man advertised his boat for sale and stated in the advertisement that she had won every race she had entered the season before. So she had. She entered two: one was a walkover and in the other her only opponent was disqualified for going the wrong course. Last year a power boat's picture was shown with the statement under it that in a race she had covered the course at a speed exceeding 23 miles an hour. In a race where I timed her she did not make 18. There is not a month but what some such statements as these are made. How often are all records broken! Especially on some far-away lake or river where the common variety of mile is one of about four thousand feet, and the boats race with the current. Now if there was an association receiving, sifting, and recording all racing events these statements would not be made, or if made, they could be hunted down, shot, skinned and nailed to the barn door.

* * *

But we are sadly falling behind in the speed lying contest. Formerly America held undisputed lead, but for the last two or three years Europe has taken the van position. The last liar over there has gotten to fifty knots, having taken ten more at a jump. The worst of it is that thousands of good people believe these yarns, not having lived with the type of animal that puts them forth. I was once talking with a Naval officer regarding the

speed trials of our men-of-war, commenting upon the fact that boats making 20 knots when first launched couldn't do 16 a few months after. I suggested that in order to ascertain their real speed they should be run from Sandy Hook to Daunts Rock off Queenstown, Ireland. "My dear boy," said the Naval man, "you can't move Ireland."

* * *

They are going to have an exposition on the Pacific Coast in 1915 to celebrate the completion of the big ditch across Panama, and a man out there wrote and suggested a race from New York to Frisco. Good idea and we will get it going. I thought of one by the way of the Magellan Straits, but it was far in the future. By that time perhaps some of the plucky fellows will have cornered enough dinero to buy a boat and go into this contest. The present generation of sports don't seem to have the money or time or inclination to tackle a four-thousand-mile jaunt. I've had to call the race to Rome off, nobody offered to enter, and the Club Italiano couldn't wait any longer. I hope they won't think we were afraid, but just hard up.

* * *

There is a race from Middletown, Conn., to Huntington, L. I., for power boats that will show a regular hurricane of starters. The Middletown Y. C. in conjunction with the Huntington Y. C. are handling the contest, and all the clubs of the Connecticut River have tailed on and will lend a hand to make it the best ever. I sent these boys to the West because they never make a practice of cruising in that direction, so it will lead to pastures new. The Camden-New York race is also well underway, and will be over a new course. The Marblehead race is fixed and will go ahead under the same conditions. The Halifax race has not settled on a date, but will do so, I hear, for some time in July.

* * *

It is no use getting up races if men won't enter them. Many men plead the foolish reason for not entering that they cannot win. Is winning the sole incentive? I think not. There is pleasure, there is experience, there are a hundred things to compensate the man who goes in like a sailor and a sport and takes his boat over the course, win or lose. This is especially so in the long races over unfamiliar water, to new ports, where you meet and make new friends. Besides, do you owe nothing to the sport, or the club, or to your comrades, or to the stranger who comes to race under your flag? He at least should be given an opportunity to show what he can do against the best of your fleet.

* * *

One way to get more entries is to give every finisher something to show that he has been in the race. The best thing is a small bronze plate to screw up in his cabin. These can be had for a small sum, and are greatly appreciated, as they are an ever-present excuse for a yarn and a drink. Also more prizes should be offered; if seven start, at least three prizes should be given, not necessarily expensive ones, but something. A prize is a prize, no matter whether you are first, second, or third.

* * *

When we came back from the first power-boat race to Bermuda, in a burst of prophecy I asserted that in a few years large seagoing vessels would be driven by internal-combustion engines. This statement of mine aroused the ire of some hoity gentleman and he denounced it as extreme foolishness in a very learned editorial. I hope he is living to-day so as to witness the arri-

val of the auxiliary barque and the Russian passenger liner. It is never safe to predict that anything in the engineering or mechanical line will not be done. Dr. Lardner asserted that steamships would never cross the Western Ocean. Lord Kelvin said flying machines were impossible, and so on and so on. But it means the passing away of the sailing vessel.

* * *

Unquestionably the sailing vessel is the most majestic and perfect creation of man. It above all his works embodies those perfections of detail which, taken as a whole, form a beautiful and inspiring object. He has never wrought in any other line a fabric which in its actions so mimics the graceful and delighting movements of a symmetrical and buoyant living thing. It seems to embody the very spirit of the enterprise that created it. It confers beauty upon the element that it traverses and takes from every change of the sea, sky and air a fresh grace and a more enchanting appearance. And when we realize what it has done for mankind: how in the shadow of its sails empires have sprung up and grown to greatness, how cities have flourished, races been nourished and housed in plenty and splendor; how it broadened the world only to bring its widely parted lands closer together, binding all in the golden bands of trade. When we recall who have trod the decks of these ships, who built, navigated and fought them, the master men of the ages, the welders and shapers of our present civilization. Thinking of these things we cannot but regret the passing of the sailing ship.

* * *

On another page you will find a bunch of letters telling what the readers under the Oldman's orders are doing for the advertisers, and the below extract from a letter from one of my Belgian readers will show what some of the advertisers do for themselves:

"I wrote three letters to the above address, the last one on February 14, 1911, requesting price list for 35-h.p. engine. Never I received an answer. Perhaps the address of that firm has been misprinted, although you must know of that fact. Now I have given the order for a 40-h.p. engine to another firm. What is the use of advertising if people does not answer to foreign purchasers?"

"I am quite delighted with your interesting magazine. I read it with an anxious curiosity each month. Your advertising section helped me utterly in the purchase of numerous engines, boat-frames, electric outfits, etc., for me and several friends of our club."

The order for the 40-h.p. was caught by Mr. Bancroft, of the C. N. Cady Company, one of my new hands. Mr. Bancroft is a bright, energetic hustler who gets after every inquiry we send him, and never lets up until he either lands the fish or else gets him near enough the surface to prove he's dog. I keep track of all my advertisers do in this line. Some of them never answer inquiries or letters, others just send a catalog and then lie down and calk the rest of the watch. The two best follow-up systems are those of the Dean Engine Company, of Newport, Ky., and Electric Goods Company, of Canton, Mass. They never let up on an inquirer until he either buys or dies. Recently I wrote to twenty firms not advertising and requested a reply; only two had the decency to answer. The next day an order came in for the very goods one of those firms made and I had the pleasure of acknowledging their courtesy with a small purchase. I fished a French epistle out of an advertiser's trash basket, he having thrown it away unread. It was an order for engines amounting to over one thousand dollars.

This is the season of the year when the automobile, rowboat and canoe get in their deadly work. As to the automobile killing, that is none of my business, but I sternly object to people being drowned in any way except by falling off the land. People who are drowned by boats upsetting or leaking or blowing up are generally greenhorns who only go out once or twice a season. They usually start in by overloading the boat and to precipitate the horror put the heaviest lady or gent in the bows. The usual drowning party consists of five, three males and two females. Harold and Maud sit in the back end, Leslie sits in the little seat in the front, and Gladys, who expects soon to be Leslie's financial burden, rests on his lap. Tommy, seated in the middle, does the rowing. He rows in the usual picnic style, moving more air than water, and dipping his nose at each recovery almost to the floor boards. All goes gaily except for a few splashes, until Gladys, finding Leslie's lap getting stiff and uncomfortable, offers to change seats with Maud. She rises to do so, and just at the same instant Tommy catches a crab, Maud shrieks, Gladys falls over on the gunwale and—Monday afternoon a paper is passed around the store asking for 25 cents from each employee to buy four of them gorgeous wreaths.

* * *

Never overload a boat, specially with women and children. This is a crime, and one that men in the Western part of the United States are frequently guilty of. A man told me that he had one day 20 adults and children in a 21-foot launch. He admitted that he did not realize at the time what he was doing, and now that he did would never take such a risk again. Years ago an old sea captain loaded a sloop with Sunday-school children and took them out for a sail. He was remonstrated with but laughed at the protests. The boat took a knockdown and the children all fell to the lee side and the sloop capsized. About two score were drowned. The old skipper died shortly after of grief. A young man took his two

sisters who could not swim out in a small canoe. He sat in the middle, a girl in each end. The canoe shipped some water and one girl in a fright sprang to her feet. All three were drowned. This story is endless. Hundreds are drowned every Summer; nine out of ten who meet this fate are greenhorns. Brother yachtsmen, whenever you see a man overloading a boat, take him on one side and speak to him. These people do not realize what they are doing. It is ignorance that drowns women and children.

* * *

Before closing I want to thank two clubs for honors of membership conferred upon me—the Oregon Dinghy Club and Middletown Y. C. Commodore Todd, of the Dinghy Club, is an old reader and has always been a zealous and energetic member of my crew. His club is as he says small, but the honor is none the less appreciated, for I know it was inspired by a genuine affection for the Oldman. For the Middletown Club I have always had a strong liking, but the membership was wholly unexpected and came to me like a fresh breeze after a day of calm. I cannot tell you how I appreciate these memberships; they are the one reward for my labors that I actually covet, long for, as I suppose a miser does for gold.

* * *

This is my last watch, until fall, as I am going to knock off and take a rest. I want to get out on the Old Ocean, where there are no fences, no laws, no noises, no letters, no newspapers, no barking dogs, no crowing cocks, no money, and no women. But you needn't think because you don't see me on deck that I am not watching the course, so mind your steering. Get into the gait and keep things rail under all season. Don't let the old sport luff, just make things bile even if you have to put a shoulder under the lee spokes. Well, here's to wishing you all a full-blown season of racing and cruising and a full lading of anything that goes to make a yachter's Paradise.



DESIGNING COMPETITION

IN order to stimulate the design and construction of seaworthy power cruisers, we propose to hold a designing competition for a 40-foot seagoing power cruiser in which a man may cruise along the coast with his family in safety and comfort, and if so inclined, may race his craft in the long-distance contests with the assurance that she will perform creditably.

The prizes will be \$50 for the best design, \$25 for the second, \$15 for the third, and \$10 for the fourth.

The judging will be done by a committee of three, a naval architect, an engine builder and a practical yachtsman, all of whom have had practical experience in the construction and handling of the type of boats in question. In the event of a tie and the committee being unable to determine between two or more designs, they all will receive a prize of the full value.

The following are the conditions of the competition:

Type of Boat.—Seaworthy 40-footer (between 38 and 42 feet) of any staunch type—raised deck, trunk cabin or

combination—and with a water-line breadth at least one-fifth of the water-line length.

Equipment.—A choice of at least two engines must be specified, also make of all the principal fittings and accessories.

Special Features.—Ventilation, plumbing, engine installation, and the security and accessibility of fuel tanks.

Accommodation.—Boats must sleep at least four people on separate bunks, and to have adequate cooking facilities, and water and food capacity for a week's cruise. Also fuel capacity for a non-stop run of 24 hours at full speed.

Speed.—Boats must be capable of a speed of at least 9 miles per hour.

The competition will close on October 1st, and it is requested that all drawings be on tracing cloth of such size as will reduce to the size of our page.

Anything that goes into the making of a comfortable, seaworthy cruiser will be taken into consideration by the committee.

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THE RUBBER

JUNE 1911

VOL XXVI
Nº 6



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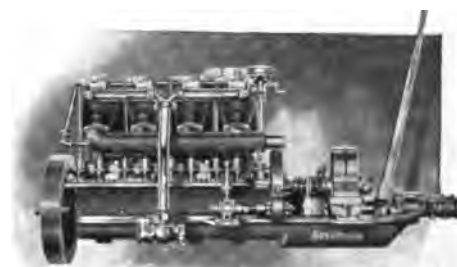
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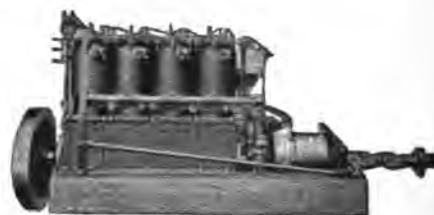
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THEY are the beacon lights of motor boating. They represent, and are the perfect quality of marine engine construction. They are solid, stable, built for hard usage—the kind of marine engine that the motor boatman needs, and always finds to be all that a high-grade marine motor ought to be.

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and then send for the Lamb Engine Catalog

CYLINDERS—Cast separately, water-jackets fitted with hand holes, walls, grounds, medium duty and high-speed $5\frac{1}{4}$ in. bore, 6 in. stroke; heavy-duty 6 in. bore, 7 in. stroke.

CRANK CASE—Large hand-hole plates, end disk removable. **WATER CIRCULATION**—Bronze, long-stroke plunger pump. Water piping has expansion joints. Water bypassed around cylinder head joint.

REVERSE CLUTCH—Planetary type. Direct cone drive ahead; for reverse gears in action, gears steel on bronze pinions; encased in oil; same speed astern as ahead. Only two adjustments. Control led to forward end of motor.

IGNITION—Jump spark; Spittford or Bosch Magneto when specified; motor's led to forward part of motor.

CYLINDER HEADS—Removable; valve caps, polished brass. **CRANK SHAFT**—One-piece open hearth steel, milled, turned and ground; fly-wheel end tapered.

LUBRICATION—Positive mechanical oiler, driven by ratchet from cam-shaft; oil carried to each wearing part; centrifugal oil rings used on crank-shaft.

PISTONS AND RINGS—Trunk pattern; 3 rings on medium duty type; 5 rings heavy-duty type; ground.

INTAKE BRANCHES—Give a direct and easy flow of gas; fitted with hand-hole plates.

CARBURETER—Schebler; controls led to forward part of motor; hot-air intake.

VALVES AND VALVE MECHANISM—Both on one side. Thoroughly water-jacketed. Valve and stem forged from one piece. Lateral adjustment on push rod. Rod actuated by link and roller of hardened steel. Guides long and removable.

CONNECTING RODS—Annealed malleable iron H. cross-section. All connecting rods except on 12 H.P. are fitted with 4 bolts; each bolt fitted with 2 nuts and cotter pins.

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The Rudder

Edited by THOMAS FLEMING DAY

Vol. XXV

JUNE, 1911

No. 6

YACHTING IN BELGIUM

John W. Ward



IF the sport of yachting in Belgium does not assume the great proportions attained in other countries, it, nevertheless, is one of the most important sports indulged in in that country, and for several years past its rate of progress and increase has been sure, if steady, until at the present time there is a fine fleet of yachts afloat in Belgian waters, racing and cruising vessels, sail, steam and power. Belgium, together with Hol-

land, is affiliated to the International Yacht Racing Union, the "National Authority" being the Dutch-Belgian Federation of Yacht and Sailing Clubs—a concern of republican character composed of delegates of the "recognized" clubs in both countries. The nature of the local waters does not tend to the encouragement of big-class racing; the 15-metre cutters being the largest size which can race in comfort anywhere except off Ostend. In fact, the largest racing cutter owned in the country belongs to the 10-metre International Class. Shoal waters and the enormous (literally) extent of inland and semi-inland waterways have tended to a concentration on the quite small classes; 8 and 6-metre International, the Sonderklass at one time, and small one-design and restricted classes.

The facilities for transporting boats from one regatta venue to another by water and the small size of the country have further tended to interclub racing, which is growing in popularity year by year. The recent introduction, too, of a "National" class has led to an increased rivalry between the small-boat sailing sections of the various clubs. This class owes its popularity largely to the untiring efforts of the Royal Ostend Y. C., the Honorable Secretary of which—Lieut. Louis Depiere—is responsible for the main points of the restrictions. To a

very great extent these boats have evolved from quite a small beginning; years ago the Ostend Club formed a one-design class similar to the 16-foot dinghys used by the Penarth Y. C. in England; though these were fine, wholesome little ships for their size, many men wanted something smarter, larger and faster. Lines of a new type of boat were obtained from the English designer, Linton Hope, from which three boats were built, fast and rather scow-like little boats but very suitable for the local conditions. Later on these boats developed the faults common to every one-design class, and a restricted class was projected which would include the existing one-design boats and yet allow scope for keener competition in designing as well as in the handling of the craft.

This year the class will reach a maximum number of boats not only in Belgium but also in Holland, where it has also been adopted as an official class. In addition to the boats already owned in various clubs, there are now being constructed new boats for the Yachting Club of Brussels, the Royal Antwerp Sailing Club, the Yacht Club of Ghent and the Royal Sailing Club, Ghent, as well as new vessels for the parent club of the class, the Royal Ostend Y. C. The new boats for the last named are being designed by the English architect, Mr. G. U. Laws. So, altogether there should be an inclusive turnout of twelve to fifteen boats in the class this year. A fine perpetual challenge cup is being put up by the Ostend Club for international competition between Belgian and Dutch boats in the class; appropriately enough, the cup will be a massive silver reproduction of the ship with which Lemaire first rounded Cape Horn and discovered the Straits which bear his name. Lemaire was a Belgian hailing from the town of Tournai; he sailed in the service of the Danish East India Company in a Dutch *yacht* with a mixed Dutch and Belgian crew.

In times past the German Sonderklass was a favorite in Belgium, but the adoption of the International Rating Rule has led to the extension of the 6 and 8-metre classes in preference. There used to be some fine racing in the Sonderklass, which boats were well suited to the local waters. Mons. Albert Grisar, Honorable Secretary of the

Royal Yacht Club of Belgium, designed most of the Belgian boats, the latest one being for the present King of the Belgians while yet he was Prince Albert. All along, the Royal Yacht Club of Belgium has stuck to the "legitimate" classes in preference to anything else; last year a syndicate of members built the 8-metre cutter *Antwerpia II* from designs by Linton Hope, and this year a newcomer is being built—*Antwerpia III*—by the same syndicate from lines from the same designer's board.

In addition to the "National" class, the open dinghy class is very much alive and puts up keen, close racing at every regatta fixture throughout the season. The forerunner of this class was the Penarth Y. C. 16-foot fleet of clinch-built dinghys which were transplanted to Belgium by the Ostend Club. They became popular at once, as they suited the local waters and the pockets of many of the younger men. When new boats came to be built to the class the original lines of the class were disregarded to a certain extent, and now boats need not be built to one uniform design but must only be less than 5 metres in over-all length and not exceeding 150 square feet in sail area. No scantling rules are imposed and boats may be built any way except that carvel construction is barred.

In Belgium, nowadays, as in most every other European country, the difficulty is to get youngsters to take up the sport of sailing. Very often boys are prevented from entering the sport on account of the expense connected with buying a boat in the first instance and keeping it going subsequently. In consequence the clubs had to cast about for some method of relieving the financial strain for budding yachtsmen. In the Royal Yacht Club of Belgium there is a special fund out of which paid hands are kept to look after members' racing boats; each member pays a small weekly or monthly contribution to the fund and can have the services of a hand to keep the boat in decent trim and go as crew in races. This way, one of the biggest items in a small racing yacht owner's budget is reduced to a minimum. In the Royal Ostend Y. C. they

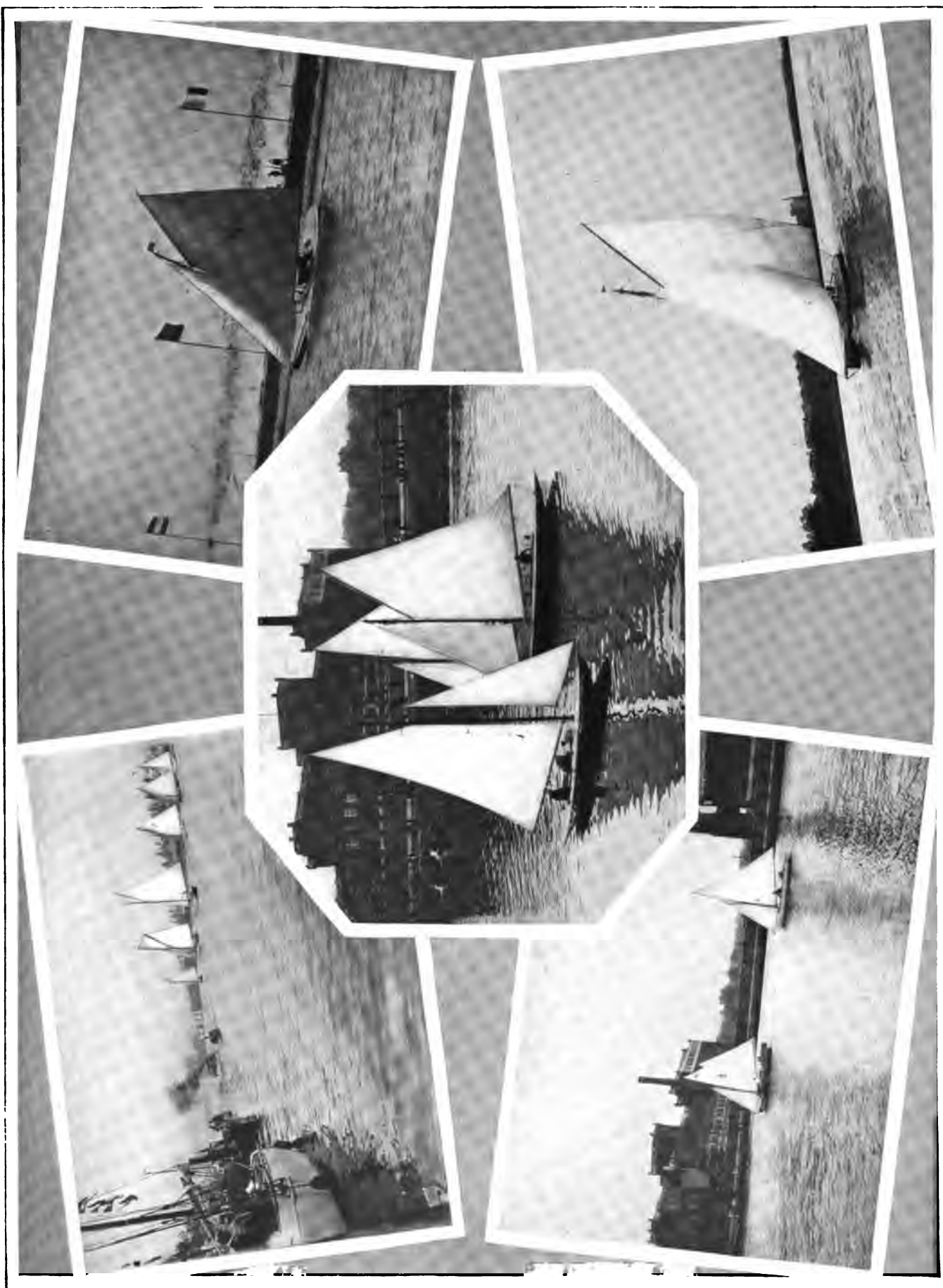


An "Aak" Yacht. The Belgium Equivalent of the British Barg Yacht

have a different system; there young men are offered inducement to join the club class by offering them a boat for a first payment of about one-fifth of its building cost. The remainder is chalked up against them and may be wiped off either by small payments in cash at intervals or by racing regularly in every race put on for the class. For each race a certain number of points is awarded according to the "Temps Primé" system; each point being worth one franc. Further points are given for a start, even if no prize be won. At the end of the season, prizes (in franc points) are given for the state of upkeep of the boat; so many for the hull and spars, so many more for the sails and gear. By this means a youngster who can scrape together a matter of \$20 can own a fine boat and pay it off within a couple of years simply by racing regu-



At the Antwerp Regatta. The Club Steamer and the Thirty-five-Foot Cruiser *Jumper II*. Owned by Mr. J. H. van Geffen-Gorus



Yachting Views in Belgium

Photos by John W. Ward



Lillie II

larly in the class. Some of the keenest youngsters have, in this way, been brought into the sport who otherwise would have been compelled to remain outside merely on account of the initial expense in buying a boat. As a matter of fact this system does not mean burdening the club exchequer very greatly beyond providing a building fund in the first place. Once this fund exists, the yearly racing budget is reduced, because the prizes won simply change hands in the club books and the prize fund put up every year goes right back to the club's account. The Ostend Club started off with four boats under this system and have added to the fleet at the rate of one or two every year.

The Yachting Club of Brussels is blessed with a kindly Commodore who encourages the local boys by building a new small boat nearly every year, which is turned out for the youngsters' benefit. There are three such at present and the amateur crews always give a good account of themselves in the local racing. In every club in Belgium the willing boy is welcome, the boy who can and will turn up to race whenever he is wanted, within reason.

In so far as "big-class" yachting is concerned Belgium is largely dependent upon the support accorded by England and Germany for the regattas put on by her clubs. The Ostend Week, which always takes place in the third or fourth week in July, is, to all intents and purposes, an item in the British fixture list. Not officially, of course, because Britain only recognizes races in her own waters; still every year when the British Yacht Racing Associa-

tion calls a conference of club representatives and racing yacht owners to settle the next year's program, a blank space is always left toward the latter end of July wherein the Ostend and Antwerp regattas can fix themselves. The Ostend Week always opens with a "Channel" race from Dover to Ostend, one of the few channel races now surviving, and continues with big and small class days alternately. Given the proper wind and weather the Dover-Ostend race can be fine; of late years one of the finest races ever sailed was that between Morton F. Plant's *Ingomar* and Herr Wätjen's *Navahoe*. They had a fine N.E. breeze, just enough to keep jib-header topsails up, and they lay close up, neck and neck, to the West Hinder Lightship; it was a matter of seconds at the finish. *Sycamore* had *Navahoe* in charge and the late "Charlie" Barr was at the wheel of the American schooner. The Ostend Week always caters for all the Yacht Racing Association classes, from the largest to the smallest, in addition to local classes.

Antwerp always holds its regatta immediately after the Ostend Week finishes. The Antwerp River is not of a nature to give good racing to the biggest classes, so nowadays nothing above the 15-metre boats go there. The

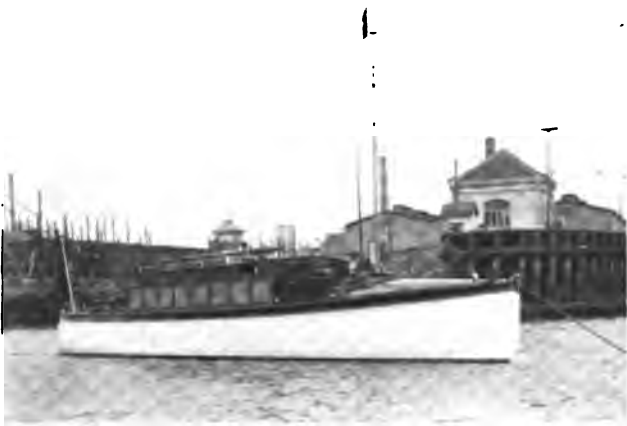


Joep

small boats get special attention at this regatta, though. Particularly the smaller International classes, the 6, 8 and 12-metre cutters. The Antwerp regatta is run every year, but the two clubs at Antwerp take it turn and turn about to organize the fixture; last time the Royal Yacht Club of Belgium had charge, this year the Royal Antwerp Sailing Club (better known in Belgium as the *Societe Royale Nautique Anversoise*) will be responsible. The 6-metre class get the lion's share of trophies, there being two up for competition now; the *Coupe de Belgique des 6-metres* and the "*Scaldisjuweel*"—the Pearl of the Scheldt. Two years ago, in the Antwerp River races, the *Coupe de Belgique des 6-metres* brought out a record turnout of boats; eleven and twelve racing for the cup and representing five different countries.

The Royal Yacht Club of Belgium have also the *Coupe de Belgique* which goes for the 8-metre class, and the Royal Ostend Y. C. has also trophies for the 6-metre and other classes besides pots for cruising-log and photographic competitions.

Considering the illimitable waterways in the Low Countries, it is only in the natural order of things that power boating is an exceedingly strong and popular branch of Belgian yachting sport. The boats afloat range



A Popular Type. English Designed Cruiser Lillie III



Outer Harbor at Ostend



View from Yachting Club of Brussels. Sail Devices are Very Popular

from small rowboats with "auxiliary" engines installed to quite large cabin cruisers. Belgium is a very good customer to the United States for the smaller powered engines; the Ferro and several other makes of two-stroke engines are very largely used in small launches, while in the bigger boats several Wolverine engines are to be found. It is much the same in fittings for both power and sail boats; there are no fittings stores of any importance dealing specially with yachts' gear, with the result that most of the stuff wanted is either gotten direct from the United States or through English agents of American firms. "Knock-down" boats are also fairly popular, as also are the lower priced complete power boats.

Power-boat racing is not indulged in to any very great extent compared with other countries; but very good sport is secured all the same. Last year an innovation in this direction was introduced when all the clubs in the country joined together to organize a "raid" from Dover to Brussels. The whole event was a mixture of races from port to port with cruises-in-company in between; the English contingent raced from Dover to Ostend, where they had off-days for sightseeing, then they raced



Home of the Royal Ostend Y. C.

up with an increase in the attendance as well; most important of all, perhaps—for that insures the continuance of the sport in future years—the number of youngsters joining the sport keeps up very satisfactorily each year. Possibly this prosperous state of affairs may be accounted for by the fact that sailing sport in Belgium is very much of a family affair, in a manner of writing. Interclub racing is the rule to a very great extent; much more so than is the case in England, for example. The clubs work all very harmoniously together and combine in many useful directions; for the "National" class boats, for instance, in holding conferences on small local matters outside the pale of jurisdiction of the Dutch-Belgian Racing Federation and in lowering the expense and increasing the attraction all round.

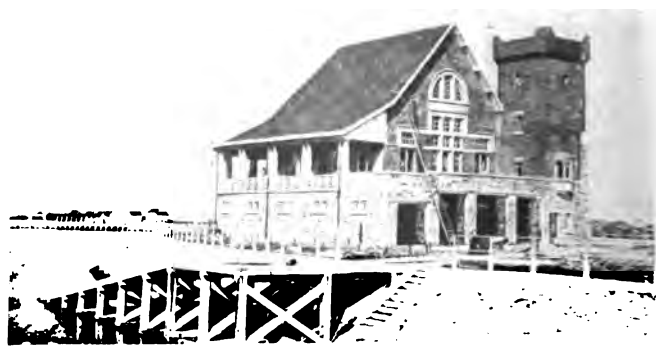
The regattas follow a more or less regular sequence each year, commencing with an interclub fixture at Cluysen-Terdonck, organized by the Ghent clubs. Other meetings follow during the Summer and Autumn at Brussels, Ostend and Antwerp. From the cruising man's point of view the coasts and inland waters of the Low Countries are unequaled; and the number of men going over from England is increasing year by year, as also is the influx from Germany and France.



Gold Medal Given Yearly to the Owner Winning the "Sceldjuwiel" Until Trophy is Finally Won

on to Zeebrugge with additional boats from Belgium. The next points in the trip, Bruges and Ghent, were reached by cruise, which continued to Terneuzen at the outlet of the Ghent Ship Canal. There followed a 35-mile estuary race up to Antwerp, with races off the town afterwards. Brussels was reached by river and canal, and a total of over seventy vessels dipped their ensigns to the King of the Belgians, who attended at the Brussels Yachting Club quarters to see the finish of the cruise. The whole event was a very refreshing change from the six-times-up-and-down-and-round-the-buoy fixtures, of which most men had got rather tired.

Taken all round, in every branch of yachting sport, the prospects in Belgium are very rosy for the next two or three seasons. The clubs are increasing in membership, the club fleets, both sail and power, are bulking larger every year, the number of regatta fixtures is going



Floating Clubhouse of the Yachting Club of Brussels



Finish of the Dover to Brussels Cruise, 1911



View in Doel A Typical Scheldt Side Village Street and Dyke

SAILORS OF THE NILE

J. W. Hayward, F. R. G. S.

THE old Pharaohs who ruled in Egypt knew all about sailing, there is no doubt of that. The art is older than the oldest records left us, for one letter of the hieroglyphic alphabet, in which these are carved, is a squaresail set between two yards.

Besides models of ancient Egyptian boats, found in tombs and preserved in the Cairo museum, two full-sized vessels, 30 feet long, have been unearthed, almost perfect. They date from 3000 B. C., and are, therefore, more than twice the age of Christianity. They are spoon-shaped like a modern racing yacht, and, strange to say, their hulls are built without keel or frames. The heavy acacia wood planking is held together merely by pins, and dovetailed dowels neatly fitted on the inside. The decks and thwarts, also, provide lateral stiffness.

A bas-relief in an ancient tomb, representing a busy shipyard scene, gives a wonderfully graphic insight into the early practice of naval architecture. Workmen are shown sitting astride of a plank with mallet and mortise-chisel in hand, others are springing a top-strake into place

with ropes and levers, and others, again, are adzing down a finished hull.

A second relief in the same tomb shows a vessel underway. A tall squaresail is hoisted upon a light double mast, a sailor is trimming the braces, a pilot with raised hand directs the course, a lookout stands forward, and three steersmen, each holding a long paddle, upon the port quarter.



Furling the Mainsail, Note the Crew on the Spar



Upstream With a Fair wind

That the sailor's art developed thus early in Egypt is not surprising. The country, except for the marshy, stream-intersected delta, is one long, narrow strip of fertile fields and pastures, thickly populated, shut in on either hand by trackless, pathless desert. In the center flows the great Nile from South to North, gently, without a rapid to speak of all the way between the Nubian frontier and the sea. From North to South there blows, most days in the year, a steady breeze. What more could the heart of a sailor desire?

The river still runs, the breeze still blows, and the native barges still take advantage of them to go up and down about their own concerns much as they did in the days of Moses and Aaron.

Their form is different, it is true; their rig has been influenced by comparison with the creaking ships of Greece; their swarthy crews bow down, at sunset and sunrise, to Allah instead of to Amon Re. The felucca of to-day is no longer a skimming dish but a straight-sided, square-sterned craft, only relieved from ugliness by her high curved prow. She carries a mizzen aft and a great, triangular lateen sail forward. The latter has not yet, strictly speaking, developed into a fore-and-aft sail; its yard is hoisted forward of the mast, above the shrouds, it is trimmed with a brace, and carries a sheet as well as a tack at its forward end. In nautical language it may be called, as the writer once overheard a little girl describe the ace of diamonds, "a triangular square." The yards are never lowered; the crew climb up them to furl the



At the Oars

sails, the lightest member, a boy of eight or ten, first, the next lightest second, and so on, as shown in the illustration on previous page.

One of these feluccas may be hired by a party of yachtsmen for a moderate sum, and the services of a pilot and interpreter do not cost very much in addition. They have no cabin; an awning and blanket is all the protection from sun or cold necessary in that rainless climate. Their worst drawback is that during the night watches, they are too often found to be manned by more than signed with them.

Allowing a week for striking the bargain (none too much in that land of plenty of time), the total voyage from Alexandria to Assouan and back, a distance of 1,400 miles, might be accomplished within three months.

Some time would be sure to be lost in grounding upon sand-banks. The natives are well used to that sort of thing and treat it philosophically.

One of the boats shown in the photographs ran aground very soon after that photograph was taken. Two of her crew, broad-shouldered, thick-lipped Nubians, when they found they could not move her with a pole, stepped overboard, took a deep breath, and disappeared under her tall, sloping bows. A few bubbles rose along



A Fellucca at the Cairo Barrage

her bilge, a groan was heard as of men straining hard, and then, behold, she lifted bodily upwards and slid off into deep water, while two copper-colored faces rose slowly, like the rising sun, above the surface of the water where she had lain.

Of the whole journey the portion immediately South of Cairo and that above Luxor are the most interesting: the least uninteresting perhaps some people would say, for, apart from the ruins along the banks, which differ according to the epoch from which they date, and a few almost deserted Coptic monasteries, there is a great sameness in the scenery throughout the whole course. Blue waters, green palm trees, gray desert hills, and azure skies greet the eye in the morning: at noon a dazzling, glaring sun changes all to a shimmering whiteness: at sunset the waters are dyed blood red, the palms are silhouetted black against mountains of gold, and the rich colors of the heavens become indescribable: at night a great, calm moon is reflected perfectly from the burnished surface of the stream, or lights with dancing rays its rippling eddies: in the morning the water is blue and the palm trees green again, and so on day after day. The monotony is almost that of mid-ocean in midsummer.



Home of the Corinthian Yacht Club at Marblehead Mass.

HOW TO PREPARE AND RACE SMALL SAILING CRAFT

T. R. Goodwin

PART I

THE handling of small racing craft is a subject that is exceedingly hard to handle on paper, as during the course of a race many situations occur which cannot be foreseen nor rules laid down to cover them, while a knowledge of tidal currents and vagaries of the wind are very essential factors which can only be learned by study of the situation. Then, too, the knowledge of the best set and trim of sails is something which only the trained eye itself can give and no article on the subject, no matter how well informed the writer may be, can give more than a few fundamental principles. The purpose of this article is to help the novice to an understanding of some of the cardinal principles which must be carefully worked out before any racing skipper can hope to be successful, and which, provided the learner has a natural aptitude for the game, supplemented by the experience which he is bound to get in every race, will soon enable him to acquire a feeling of confidence in both himself and his boat, without which no skipper can ever be successful.

The handling of a racing boat of any description can be divided into three distinct parts: the preparation and care of the boat herself, her spars and gear; the care and handling of sails, and the actual sailing of the boat. Of the three it would be hard to say which is the most important, as neglect of any one detail will spoil the most careful preparation and ability in either of the others. This fact is too often completely overlooked. Many a good boat handler is only moderately successful because he neglects the little details in the care of his boat and gear, and no man is wizard enough to take a rough or poorly rigged boat, or one with ill-fitting canvas, and win from men of anywhere near equal ability, whose boats are fit in every detail.

The first step in fitting out a racing craft is the bottom. Too little attention is generally paid to this important detail. A bottom cannot be too smooth and it must not only look smooth and shiny but it must actually be smooth. This is of particular importance in light or moderate airs and it is astonishing what a difference it will make in the speed. The writer was handling a knockabout with well-known ability in hard breezes but which was considered a dull sailer in light going. The first season she proved true to her reputation and was beaten before the gun was fired if the wind fell below eight or nine miles an hour. Her bottom was what would ordinarily be considered in good condition, but before she was launched the following season, hours were spent with fine sandpaper and a number of coats of paint applied thin and rubbed until there was scarcely anything left. During the season she was hauled out frequently and rubbed down and pumiced several times. Her reversal in form in light airs and drifting matches was remarkable and she won numerous races in

just the conditions that she had been badly beaten during the preceding year.

If the boat shows her seams badly and her plank edges project to any extent, all such places must be planed flush before any kind of a finish can be obtained. Unless the paint is to be entirely removed, the hull should then be gone over with a wire brush, which will remove all loose or scaly paint. She should then be sanded carefully with No. 2 sandpaper until the surface is as even as possible all over and then rubbed over with No. 1 paper before any paint is applied. A coat of ordinary lead and oil paint of any desired shade, with a good proportion of turpentine, can then be spread all over the underbody, care being exercised to brush it into all pitted or cracked places in the paint. When this has become thoroughly dry and hard it should be thoroughly rubbed. If this has not filled in all the pitted places and patches where the paint has been scrubbed off, so as to make a smooth surface all over, another coat should be applied and rubbed in the same manner until the hull presents an unbroken surface except in such places as the putty has cracked out from the seams. Don't slight the sandpapering. It is tedious and tiring work rubbing up over your head with the paint powdering down all over you and into your eyes, but there is no royal way to do this work, and plenty of sandpaper, throwing away the used sheets as soon as they become filled or dull, will shorten the labor considerably. A bottom needs a lot of paint applied, but not much left on it, and if these preparatory coats are rubbed practically all off except where they fill in depressions, the final result will be better by it.

This job being finally out of the way, mix a few pounds of white lead and whiting, rolling the whiting into the lead until it is not quite as stiff as ordinary putty, and coloring it to match the proposed bottom color as nearly as possible, and with a flexible putty knife, go over all the seams or small openings of any kind such as nail holes or bungs that do not come flush with the surface and fill every chink and cranny that shows the slightest depression, removing as much of the putty as is possible from the wood surrounding with the back of the putty knife. Let this putty harden until it will bear rubbing without dragging out and then sand off with No. 1 paper until the surface is flush with the surrounding wood. The bottom is then ready for painting.

The topsides can then be considered or possibly it is better to go at them first, but as early Spring weather is not well suited to burning paint and the days must be picked when a paint burner is of any practical value, you can work along on both bottom and topsides according to the amount of wind. If there is any considerable amount of paint on the topsides, the only thing possible

to make a smooth job is to burn it off. The fact must not be lost sight of that at any considerable angle of heel, about as much topsides are in the water as of the bottom, and they should be just as smooth. If the paint is thin and little broken along the seams and shows no disposition to peel or chalk off, the same method can be followed as with the bottom. Unless this is the case get an ordinary gasoline paint burner, a putty knife and a long-handled scraper and get the paint off clear to the bare wood. In some cases the paint will bubble and come off just by using the putty knife, but more often the scraper will be necessary. Watch the grain of the wood carefully and don't dig into the planking any more than you can help, as all those places must be carefully filled. When the paint is all off, scrub her good first with No. 2 and then No. 1 sandpaper and then put on a thin priming coat of paint. When this is hard, sand it down smooth and putty carefully and when the putty has been sanded the boat is ready for painting.

There are a number of enamel paints on the market that give good rubbing surfaces and for this reason are preferable in a racing boat to flat or yacht white paints, as the latter are more or less chalky in composition and will not take the polish of the hard, glossy paint. Three

coats applied fairly thin and well rubbed between each coat should do the trick. For the bottom, none of the so-called anti-fouling paints are of much use to a racing man. The only kind of paint that will give a good racing surface must be hard and suitable for numerous rubbings and the best way to keep the bottom clean is to clean it or rather not give it a chance to foul.

Any good, hard surface paint is all right for the bottom, even though it have not the slightest anti-fouling properties, but there are one or two kinds of semi-enamel paints with some non-fouling properties that are rather better to use, as barnacles will sometimes set like sand in less than a week and ordinary paint makes pretty good food for them.

A large amount of elbow grease is the main thing in finishing the hull and start early and take plenty of time to it, as the job once well done unless you neglect the boat, the future work is comparatively light. It is a good idea, if you have the time and ambition, to rub down the last coat with pumice and water. A good-sized piece of felt and a few pounds of No. 0 ground pumice and a bucket of water are all that is needed. Wet the felt thoroughly and sprinkle on plenty of pumice and rub just as long as your ambition holds out, the longer the



Gray Jacket

better. When this is done, let the pumice dry on her and wipe it all off with cotton waste or soft rags.

During the season haul her out as frequently as your pocketbook or facilities will permit and rub her over with pumice and water. When the paint begins to get too thin, let the hull dry thoroughly and spread the paint out thin and rub down well. Unless you have a big boat, in which case you will not be bothering with all this but will turn her over to some yard to do the work for you, you need not go on a railway at all except for painting. If you have a rise and fall of tide anywhere near the draught of your boat, provided she is a keel craft, lay her in on the morning tide alongside a wharf and ground her a couple of feet away from the spiles or the underpinning so that you can work around her. Use your halyards or back runners for side guys, making one side fast to the dock and running a heavy anchor well out for the other side. If she is of the short keel type she will probably have a tendency to fall over on her nose and a line should be run well astern from the masthead to some fixed object if possible, if not to a heavy anchor. Quarter lines from the bow and stern to the dock on one side and to anchors on the other, will hold her firmly and there is practically no danger of her falling over if she is well guyed before she starts to list either one way or the other. The bottom should be fairly hard and the place protected from the sea to some extent to keep her from pounding and make it possible to work. By following the tide down and up again in a bathing suit, the boat can be rubbed down just as well as if on shore and much cooler if it is a hot day.

By putting her on in the morning tide and floating at night, it is pretty safe to ground her on the top of the tide, as the evening tides are usually higher and there will be no trouble in floating her. It is, however, a good precaution to ground her after the tide has fallen a few inches to make sure of not getting nipped, as a strong breeze will sometimes hold back the evening tides considerably. The rise and fall of the tide is much greater close to the full and new moons than between, and these are the best times to lay a boat ashore.

There are a few more points regarding the hull of the boat. Be sure that there is no play in the rudder either at the tiller or in the dowels, as lost motion makes difficult steering. If the boat wrings badly under sail, or leaks to any great extent, it is almost impossible to keep a good bottom. Water makes pretty poor ballast and if it is possible you had better get some good builder to stop the leak. In case of her wringing, this cracks up the seams badly. A few floor timbers at the weak spot or a couple of bronze straps let into the planking outside will usually cure this trouble if the boat is well constructed or not badly strained or rotten.

Now let us take up her gear. Hollow spars are much preferable if you can afford them. Their lighter weight gives you the opportunity to use stronger rigging and still save weight above deck and every pound counts when it is up in the air. Patent jam cleats on deck are very handy for any place where you do not have to give and take on the line such as back runners, jigs or for a spinnaker aft guy, but an ordinary hollow bronze cleat is much better where there is any slacking or hauling on the line. The deck leads should all come where they are most convenient to be handled by whichever member of the crew is to have their care, and no lead or cleat should be in such a position that it will interfere with the helmsman when the sheet is being tended. As some boats are very sensitive as to trim, it is often well to

change the deck lead to such a position that the crew can handle the sheets without shifting position to any great extent.

No rigging can be too good, and the difference in cost between the best and poorest rigging is comparatively small in a small boat, and the very best wire and manila should be used. If the boat carries over 400 sq. feet of sail, wire halyards with manila hauling parts are much to be preferred, as when the sail is set it stands and does away with the trouble of stretching halyards, which will spoil the set of a sail. All blocks should be of sufficient size to allow rope heavy enough to stand the required strain run through them freely. A small jig on the mainsheet, consisting of a single and a double block, spliced into the sheet end, will make it possible for one man to block down without aid even in a stiff breeze. Double headstays are almost a necessity if a balloonier or reacher is used, and the spinnaker halyard should have a snap hook or snap shackle in each end in order to use either end according to the side on which the sail is set, and the sheave of the block should be across the boat instead of forward and aft. A double set of halyards should be used forward, so that one jib can be set before the other is taken in, as nothing kills a boat's way any quicker than sailing her without her headsail. All the wire rigging should be served with marline or covered with sheepskin to prevent chafing the spar. Bridles on both the boom and gaff are of great help to distribute the strain on the spars and keep the sail in shape.

If you can afford it, it is an excellent idea to have a slide on both boom and gaff and patent fasteners on the hoops, so that the sail can be quickly taken off, and in any case there should be a sheave in the end of both these spars to permit slacking or hauling out of the sail. If there is no restriction or penalty against it, the boom should be hung on a slide a foot or eighteen inches long with a strap to secure it in any desired position leading to a cleat either on the deck or side of the mast. Raising the whole mainsail this entire distance in a light air is almost as good as increasing the sail area by the amount of the extra hoist, and in a fresh breeze the boom can be hauled down to a point where it will just clear the house or cockpit, which is equivalent to tying in a small reef without the trouble of hauling out and tying in the points or lacing.

Reefing plaits or pennants should be cut and both ends whipped, cut in pairs the right length for each set of reef pennants, and each pair knotted together loosely with a single knot to keep the sets from getting mixed. These with a ball of cotton lace line, if the sail has no reef points, should be kept always in the same place, so that they can be gotten at quickly, and if any are lost through hurried shaking out of reefs, they should be replaced as quickly as possible. These details seem insignificant, and yet it is paying attention to just such small matters as these that wins races. If the wind freshens after the start, which frequently happens, it is invariably the custom to hang on to the whole cloth until the last possible moment, and if there is delay in finding the reefing gear, with the boat probably on her beam ends, much valuable time is lost.

Balloonier sheets and spinnaker aft and forward guys, with snap hooks or snap shackles in one end, should always be kept in the same way, and one or two sets extra will more than pay for the trouble of making and carrying them, as it is sometimes necessary to cut them away, or they are lost off the deck, and as races are usually

sailed in two rounds, if you have not a spare sheet handy it will make it pretty hard on the second round.

The care and proper set of sails is probably the most important factor of all in getting speed out of a well designed hull and one that is almost impossible to explain on paper. All sails are cut with what is known as a draught. This consists of cutting the sail in a manner that when filled with wind it will shape itself into a perfect sweep from leach to luff, the curve being like a bow that is tapering in its spring to a point near the mast, then turning in quickly. The draught should start very gradually at the leach, increasing in a perfectly fair curve until within a short distance from the luff, then turning in quickly, still in a fair curve until it strikes the luff rope. There must be no flat or hard spots at any point, as they will spoil the effectiveness of the best sail.

This draught in a sail should vary in amount according to the average strength of wind encountered in the waters in which you are sailing and also as to the stiffness of the boat herself. A large amount of draught is best where the airs are light or the boat very able, and a fairly flat sail is found more effective where the winds are strong. A stiff boat can often be made tender by carrying too baggy a sail, while a boat that has a reputa-

tion for being tender will often be found fairly able if given a flat sail. It must not be taken for granted that because a sail is baggy it has a good draught. A baggy sail is absolutely useless for any kind of going, and if the bag is back near the leach it is absolutely incurable. In buying sails go to a first-class sailmaker who thoroughly understands his business. Tell him your needs, the kind of boat which you have, and the average weather in which you race, and leave it to his judgment as to the kind of sail you want. He is making sails every day and studying how to get the most efficiency and can get out your sails far better than if hampered with suggestions.

If the sail is to have considerable draught it is well to have what is known as a roach reef. This consists of a line of grommets running from the tack to clew in the reverse sweep from the draught, and will take the fullness out of a sail in strong breezes without reducing the area, and will enable you to carry the whole sail to advantage long after you could if you were not able to flatten it out in this manner. The main objection to the roach reef is that it is liable to stretch the sail, causing a bag just above the boom, and it should not be used in ordinary sailing, using the regular reef when the wind is too strong to carry whole sail comfortably.

(To be Continued.)



Photo by Walter

Waiting for the Tide

SAILING ON TROPICAL SEAS

Harry H. Dunn

PART V—(Concluded)

On the Lakes of Old Mexico



WHILE Mexico's lakes, of which there are nearly half a score, are not connected with either of her two coasts in any navigable way, they have been for centuries highways of commerce, first between Indian tribes, and now between the various sections of the States in which they lie. Most of them are at some elevation above sea level, some being more than 5,000 feet up in the air, and all are large enough to float sail or power-boats of considerable size, with the possible exception of Tezcoco, which is so shallow that it can be waded throughout by a small boy, yet covers a considerable area.

Lake Chapala, largest, most beautiful and most modern of all the lakes of Mexico, has been described in a previous article of mine in these pages; yet I cannot refrain from adding that it offers the strongest lure of all the pools of Mexico to the yachtsman from a foreign land. Smooth as glass on ordinary occasions, there are yet times when it requires the skill of the most experienced sailor to navigate it successfully.

From the villages on its banks, from the grain fields which lie behind these settlements in the hills of Michoacan and Jalisco, and from the haciendas which line some portions of its shores, a large commerce is carried on by means of antiquated, wind-driven Indian canoes. Some of them are thirty feet and more in length, apparently tipsy things, but safe as an ocean liner in the hands of their native owners. One can sail for fifty miles on Chapala, almost in a straight line, while there are beautiful cruises, around the curving shores of the lake, or among the historic islands which dot its waters at one end. There are the ancient villages of the Indians who were here when Cortez came, for the yachtsman to visit, such as Jamay and Chapala, and others whose names do not now occur to me, while beneath the lake itself lie ruins of whose age or builders no man knows anything whatsoever.

One of the beauties of Lake Chapala is that the visitor does not have to bring his boat with him to enjoy cruising on the landlocked waters. I say, landlocked, though the river Santiago, which drains the lake, does run to the sea, but it is not navigable for anything larger than an Indian canoe, and then only with the greatest difficulty. There are numbers of boats on the lake, particularly sailboats, which can be rented, and, at Ribera Castellanos, on old Point Fuerte, the most beautiful part of the lake, the management at all times keeps a combined power and sail yacht at the disposal of its guests.

My favorite way of cruising on Chapala is in an Indian canoe, but not every stranger from the North can stand the narrow quarters and the occasional work neces-

sary to aid the boatman in handling his canoe, let alone the dealing with the Indians, many of whom speak only their native dialect. On the lake there is a fast boat, Condor, which has made some good speed records, while there is now a power boat which claims a speed of 30 miles an hour, though I doubt if she can do more than 25, owing to the difference in horse-power between this elevation and the point nearer sea level where her engines were tested.

At Lake Chapala, too, the visiting yachtsman can find better accommodations, and more courteous treatment, than he can at any other resort, coastal or inland, in all the republic. This is the hotel at Ribera Castellanos, near where the Santiago River leaves the lake. Dropping off the train from Manzanillo or from the city of Mexico at Ocotlan, the traveler can take coach over the road, or power boat on the river to the hacienda. At this point a wharf runs out into the lake, and all manner of boats may be obtained there, from the 5-mile-an-hour Indian canoe to the 20-mile-an-hour power boat.

At the opposite end of the lake, the River Santiago enters, under the name of the Lerma, and up this one can cruise for some distance among the marshes, provided he has a boat of sufficiently shallow draught. Here can be enjoyed the best duck-shooting in Mexico, while the stream passes close by the spring surrounding which have been discovered the bones of a number of prehistoric monsters which were not hitherto known to have inhabited Mexico, even in the days before the great glacier overwhelmed so large a part of northern North America.

After Chapala, probably the most interesting lake in Mexico is Patzcuaro. The lakes of Mexico are of exceedingly great beauty. Than Chapala and Patzcuaro, there are no prettier waters anywhere in the world; not even the romantic Como can surpass their islands, their wooded shores and their picturesque, thatched-hut villages which line every shore. Only modern villas are lacking to make them as attractive as Como or Maggiore.

Patzcuaro is the highest navigable water in Mexico, and the second highest on the continent, Yellowstone Lake alone having a greater elevation. The islands look exactly like what they are, the tops of submerged mountain peaks. On their rugged sides, seeming to cling to them like barnacles to some old hulk, are scattered huts of fishermen, who eke a precarious livelihood from the finny hordes of the waters. Up at the top of one small island rises the square white tower of a church, built more years ago than you and I are old, the sonorous song of its brazen Spanish bells floating out over the waters with a peculiarly restful sweetness.

Sailing canoes of the Indians also dot this pool, 7,183 feet above the roar of the surf at Vera Cruz. Here and there, too, rude sailboats flit across the waters, or immense flat-bottomed Indian barges, laden with the produce of many a field, skirt its shores, clinging to the in-shore calms as if loath to leave them and plunge out into the midst of the blue waters. These boats make regular trips between the town of Patzcuaro, other points on the

shore, and the islands. The lake itself is in the state of Michoacan, which also claims part of Lake Chapala within its boundaries.

The lake is about twenty miles in length, by fifteen or eighteen in breadth, if Mexican geographers and map-makers are to be believed, though it has always seemed larger to me. Some parts are of great depth, particularly around the islands, whose sloping sides seem to slip almost perpendicularly down, down, down, after they reach the water's edge. The proper way to get to Patzcuaro is to take train over the western division of the National or merger lines, and stop off at the town of Patzcuaro. The little city itself, which the conquistadores called "place of pleasure," is about a league from the station, and over this one rides in a diligencia, drawn by two mules who seem to have been here so long that they have become a part of the landscape.

At Patzcuaro one takes one of the long, low, flat-bottomed, cotton-canopied Indian canoes for Tzintzun-tzan, where there is preserved a wonderful painting by Titian, representing the entombment of Christ. Thousands and tens of thousands of dollars have been offered for this picture, but the authorities of the little church in which it is hung refuse to part with it, and I do not believe that ten times the price paid for the celebrated "Angelus" would remove it from its fastenings on the ancient wall.

These Indian canoes—and there is not a modern sail-boat on all this pretty lake—remind one much of the gondolas of Venice. Up in the stern stands the single boatman, his low craft reaching out 18 or 20 feet in front of him, and, with steady strokes of his paddle, he drives it on, on, on, no matter how heavy the load or how rough the lake. And all these Mexican plateau lakes can be rough on occasion. There seems to be a peculiar cross current of air which striking the regular winds, sets the waters in a turmoil, to which there is neither direction nor purpose. You cannot keep the head of the boat to the wind, or away from it, accordingly as you are using power or sails; neither can you run with the breeze, as we say on the shores of California. All the best sailor can do is keep his little craft out of the trough of the small but choppy and hard-flung waves.

There is no such thing as getting a yacht on Patzcuaro, and the native Indian canoes, with their huge, heavy tillers, are difficult of management by a man accustomed to the nicely balanced wheels of modern sailers, but the cruise around the lake is most pleasant. The picture, even from a man-driven canoe creeping slowly along the edge of the lake, has its double distinctly outlined in the water below. Every single canoe seems two, their keels coming together in the mirror of the waters.

Fishermen are everywhere every day, except saints' days, on Patzcuaro, their canoes dotting the flat floor of the pool on every hand. They are long, flat-bottomed boats, with a piece of cotton stretched over hoops bowed across the bed, like the hoops of an old-time prairie schooner. The fisherman, an Indian, stands in the bow, with a long pole, to the end of which is fastened a square-mouthed scoop net. This he dips into the water as the schools of fish pass by. The takes are small, but the fishermen patient, and a few cents a day for their total catch is more than sufficient to their few and simple needs.

It is about three hours from Patzcuaro to Tzintzun-tzan, where is the old church and the famous painting by the old master, and when you get there a small tip to the padre who cares for the old church will let you into the vault-like room in which the treasure of art is kept.

On the same division of this railroad is Lake Cuitzeo, larger, but not so beautiful as Patzcuaro. It is thirty miles West of Acambaro, where the branch road joins the main line, and is a long, slender body of water, ideal for racing—if only some one had taught the natives to build real sailboats instead of dugout canoes. Its length is forty-five miles, much of which is fairly deep water, and its width about ten, its shores filled with wild fowl during what we of the North know as the "Winter months."

There are also several islands on this lake, merely projecting mountain peaks, as are those of Lake Patzcuaro. One of these, "La Isla de los Burros," is inhabited by an isolated tribe of Indians, very unlike those anywhere else in Mexico. They know nothing of the mainland, many of them have never visited it, and they care absolutely nothing for such visitors as chance may throw on their shores. They speak little or no Spanish, and there is not one in a hundred of the Indians of the mainland who can understand their dialect. It is probably a remnant of some language, which, if not indigenous to this country, at least was here before the Aztecs came.

The entire tribe is devoted to fishing, living mainly on the product of the waters as food, and selling some of their catch to fishermen from the mainland, whom they compel to confine their fishing to a certain distance away from the island of the burros. Most of the fish are small, about an inch and a half or two inches in length, and these, dried entire, are eaten without cooking.

On the Southeastern shore of the lake is Andocutin, a station on the railway line, and on the North is the town of Cuitzeo, nothing but an old village, but so isolated that it is interesting. Quite a traffic is maintained across this lake by means of sailing canoes, and there is doubtless a chance here for power and sail-boats, if put in and operated on low rates for freight and passengers. All this part of Mexico is fertile, and fairly densely populated, so that there should be some sort of carrying to be done all the year round.

Cuitzeo has some fame among the Indians throughout Mexico for the curative properties of the waters which flow from hot springs South of the lake, near Querendaro station, on the railroad. There can be little doubt that these springs were much frequented by the royalty of ancient Mexico, long before white man ever set foot in America's Egypt. The laid-stone baths and tanks bear witness to this, but nothing worth mentioning has been done to develop what might be one of the really valuable resorts of the republic. These springs are marked for miles by immense columns of white vapor rising from the marsh, and retaining their peculiar shapes to a height of many feet. The ground surrounding the springs is covered with rude crosses made of sticks and twigs, left there by bathers who have been healed by the waters.

One of the interesting stories of Lake Chapala, which I failed to tell in the first part of this story, is that one which relates to La Libertad, the large lake's first steam-boat. The boat and its machinery were built in California, and transported piece by piece on the backs of burros over the mountains from San Blas, in the territory of Tepic, to which port it was brought by steamer from the Golden State. She ran from La Barca and Ocotlan to the islands and villages up the lake, and the trip in those days, when mainland and islands were still thickly peopled with Indians, was most thrilling.

Several lakes, none of them large or more than ordinarily pretty as lakes go in the tropics, are located in the Bolson de Mapini. Mayran and Parras are the largest of

these, twenty to thirty miles long and ten to fifteen wide, of no great depth, and scarcely worth taking the trouble to visit, unless one has more than a sightseer's interest in their shores.

But, without doubt, the most famous lakes of Mexico are the six shallow pools which dot the valley of Mexico. Once, when Montezuma ruled this sun-kissed land from his stone palace where the Mexico City Cathedral now stands, these lakes were all more or less united, forming one vast sheet of water, in the center of which stood Tenochtitlan, the impregnable capital of the Aztec empire. I say "impregnable," and so it was to the allied tribes of the North and South and East and West which sent their armies against it. Yet it could not withstand the onslaught of a handful of daring Spaniards under Hernan Cortez, and, on what is now one of the principal streets of Mexico City, was fought the bloodiest battle of the conquest—"la Noche Triste."

To-day in place of the rolling war drum from the teocalli of the Aztec War Lord, the clang of church bell and the shrill scream of modern locomotive breaks the silence above their waters. To-day power boats and sailing craft glide where the war canoes of Montezuma and his Tzins were wont to lay a path of death and destruction. To-day, one may ride in a canoe or a power boat from the edge of a city of 500,000 people out through the great, ancient Viga Canal to one or two of these lakes, seeing the idle, worthless gipsies of this century playing over the graves of men who were kings when Nero was an infant.

On the North of the city lie the lakes Zumpango, Xaltocan and San Christobal; on the East is Texcoco and, on the South, Xochimilco and Chalco. All these lakes are comparatively shallow, and are without an outlet save what results from the great drainage canal and tunnel, a

piece of massive engineering which, in itself, is worth miles of travel and hours of any man's time.

No steamer has as yet made its appearance on the lakes of the ancient Vale of Anahuac, but power boats are used for pleasure trips. All the freighting, however, is still done, mind you, within ten miles of the capital of the republic, on slow, flat-bottomed barges and canoes. These are poled through the shallow waters on trips which should require hours, but which really occupy whole days in the making.

On the lakes there are regular, man-propelled packets, which make trips from village to village and into the City of Mexico itself, bearing grain, vegetables and flowers. Tons on tons of flowers are brought into the markets of the city daily, for these are a flower-loving people, and Mexico is a blossom-laden land. Along the Viga Canal are located the famous floating gardens, or *chinampas*, from which Montezuma drew his supplies for the royal tables in Tenochtitlan. They still supply the vegetable, fruit and flower markets of the city, and the men who work them are descendants of the Aztec gardeners who made them famous four hundred years ago.

Far down in Chiapas, almost to the Guatemala line, is Lake Lacondones, and, still farther South, are Lake Bacalar, Lake de Chichicanalb, and others in Quintana Roo and Yucatan, but few indeed will be the adventurous foreigners who will penetrate to these. Of them, I am willing to confess, I know nothing now, but hope some day to stand on their shores, and, possibly, sail their waters, should I be so fortunate as to find a board on which to float. Inasmuch as there are no boards in these jungles, however, it is most likely that if I ride at all, it will be astride a tree trunk, holding up my feet with both hands to keep from being bitten by the fresh-water sharks of these inland pools.



Native Catamaran at Colombo, Ceylon

HOW TO BUILD A STERN-WHEEL LAUNCH ALLIGATOR

R. M. Haddock

PART II—(Concluded)

BEFORE proceeding with the planking, the pitman arms which bear the stern wheel should be got out as shown on the plan and fitted in place, where they are to be partially fastened till after planking, when through fastenings must be put in. You will see by the plan that the side planking is carried out to make a neat appearance.

Planking as a rule should not be too wide, 6 to 7 inches being right. There should be two fastenings only at each frame about $\frac{7}{8}$ inch in from each edge. Where a plank has to be joined the butt should come between frames and be backed on the inside with an oak block. Five fastenings go into each plank end. This is shown on the drawings. The bottom planking runs fore and aft parallel to the center line of the keel.

On the sides, to make a good looking job the seams should have approximately the sweep of the sheer. The sheer-strake should be about 7 inches amidships and $4\frac{1}{2}$ inches at the ends. You can gradually increase the end width until the plank is of even width and about three of the lower strakes will have to be wider at the stem than at the middle, say, about 5 inches amidships and 7 inches at stem. You can lay the widths off on stem, moulds, and stern and see how they will come out. At the after end the seams do not sweep up to the transom, but run straight till they die out where they strike the bottom planking.

Now it will be necessary to take what is called a spiling to get the shape of the top of the sheer-strake where it is to fit up to the underside of the ribband. This is a very simple and accurate way of transferring the shape from moulds or frames to the board that is to make your plank. First you will need what is called a staff, which is simply a clear straight piece of pine about 5-16 or $\frac{3}{4}$ inch thick and 5 or 6 inches wide and as long as you can conveniently get, about 16 feet would answer very well.

Assuming that we wish to get the shape of the top of sheer-strake we will place the end of the staff at a mould, say No. 7, about 1 inch below the ribband. Now tack it here and to the other moulds back to the stern, keeping it about level and avoiding bending it up or down, just push it in naturally till it touches moulds and frames. Take your compasses and set them to about a 4-inch radius. It is a good plan to mark this radius on a piece of board or the side wall, so that the compass can readily be reset should it become changed. Now place one leg of the compass close up against the underside of the ribband on mould 7 and sweep an arc on the staff with the pencil leg. This arc to be as nearly a semicircle as will go on the staff. Do the same at the other moulds and a frame or two between. You will now have a number of arcs of the same radius along your staff. Take off the staff and lay it on the board from which you wish to get out your plank and tack it lightly so it cannot move. Now with the compass still set to the same radius

and with one leg at any point on the arc on the staff strike an arc on the board, from another point on the same arc on the staff strike another arc on the board. The intersection of the arcs on the board will be the point wanted and will correspond with the point on mould or frame under the ribband where the leg of the compass was set to sweep the arc on the staff. The arcs on the board can be short ones as only their intersection is needed. The arc on staff should be as long as may be convenient so the points taken can be as far apart as possible, which will make the arcs on board cross at nearly right angles, giving a well-defined point of intersection. Do the same to all the arcs on the staff and this will give a series of points on the board through which a line drawn with a batten will give the correct shape of the top of the sheer-strake. For the under edge lay off the width at the ends and at the moulds as determined on and spring a batten fair through these points and draw the bottom line. Saw out the plank and plane up the edges to these lines. Now clamp it in place and if the work has been accurately and carefully done it will exactly fit. If this is the case, take it off and use it for a pattern to make the plank for the opposite side. After sawing out this second plank tack the two lightly together and put them in the bench screw to plane the edges up fair. This is where two bench screws will be found a very handy rig placed about 10 feet apart. Proceed with the rest of the planks till the entire strake is on.

The shape of the remaining strakes are gotten in the same manner. The inside of the planks should fit tightly together and the outside should be open about 1-16 inch, so that you must use care in keeping the edge of the plank exactly square when planing up and frequently test it with the try-square. Then take just the barest shaving off the outer edge. Be very careful in this as it is easy to take off too much, which would make a very bad-looking seam, and one that would not hold calking so well. Some builders bevel only the edge of one strake where they come together, leaving the other edge square. After the boat is planked it must be calked and planed off smooth. As yellow pine is not the easiest wood to plane, especially under the bottom where one has to work in an awkward position, it is well to see that the boards for it are all of one milling, that were run through the mill planer at one setting, thus insuring that they will all be of one thickness, and a very little work with the smoothing plane will suffice before putting in place.

In calking if you do it yourself you will need a flat-face calking iron and a dumb iron. The flat-face iron should have the edge about 1-16 inch wide and with a thin blade for some little distance from the edge. This iron is for driving in the cotton. The dumb iron is for opening up the seam evenly, and has a more wedge-shape edge. It is worked along the seam, driving it in to an

even depth of about $\frac{3}{4}$ inch. By dipping the iron frequently in linseed oil it will not stick in the seam when driven in and will work more evenly.

Two or three threads of ordinary calking cotton are all that is necessary. Do not lay the cotton in a straight string stretched tightly, but roll it together and gather it with the iron into loops about 2 inches long and slack between the points where the iron drives it lightly in catching it up to the seam. After catching it up for 2 or 3 feet, go over it with the iron and set it in so that it is about $\frac{1}{4}$ inch below the surface. If you could watch a builder do this for a few minutes you would see exactly how it was done and with a little practice would soon acquire the knack.

After the cotton is all in, the seams must be payed as it is called, which is working paint in with a narrow brush. Good thick paint is best and it will hold both the cotton and the putty in.

If you have to leave off work during the calking, always leave a short piece of the cotton hanging out of the seam where you stop, then you will know where to begin again and will not miss any spots, as might be the case if you drove it all in.

Now the boat is ready to have the moulds taken out and the clamps and keelsons put in. The clamps should be fastened with bolts or rivets right through planking and frames, the heads to be counterbored and plugged in the planking. About 5-16-inch bolts, or rivets made from galvanized iron rods, should be used, riveting up over galvanized washers. These clamps are $1\frac{1}{4}$ by 4-inch yellow pine and should be got in one piece for the whole length. If not, they should be scarfed together with at least a 2-foot 6-inch scarf.

The keelson, which is $3\frac{1}{2}$ by 6-inch yellow pine, can now be put in place and fastened. It is to be notched down over the frames $\frac{3}{4}$ inch and a 7-16-inch bolt or rod used to fasten it in place at each frame. This rod should go through planking, frame and keelson and be riveted up in same manner as the clamp. There should be but one bolt to each frame and they should be staggered a little each side of the center line on alternate frames.

In taking out the moulds it is essential to tack a strip across securely to keep the boat from spreading till clamps and some deck beams are in place.

In fastening the side frames and bottom frames two good rivets made from $\frac{1}{4}$ -inch rods with washers are sufficient.

After the keelson you can put in the sister keelsons as shown and fasten them in the same way.

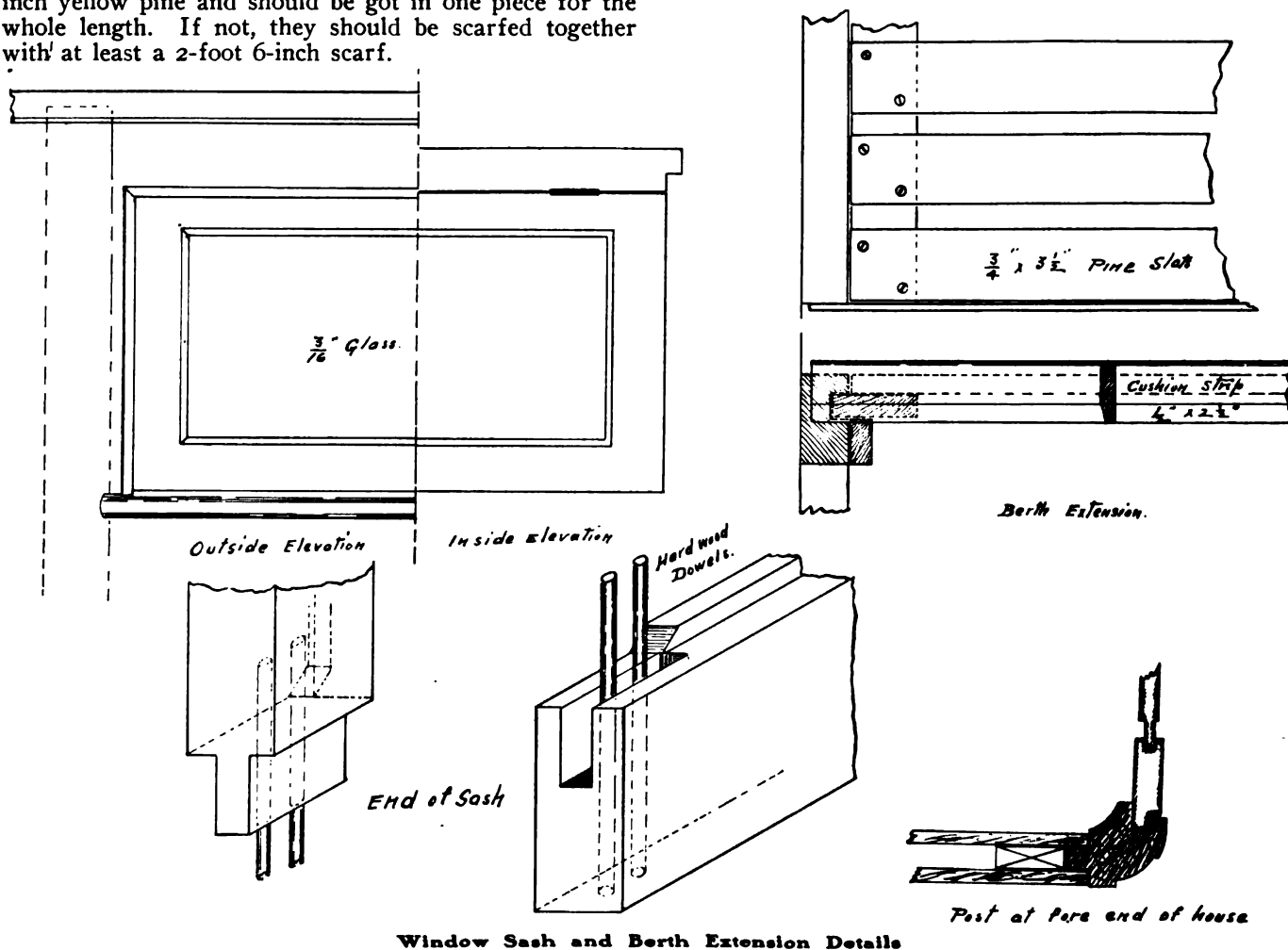
Next the side stringer, and the hull will be ready for a coat of paint inside.

Now the boat can be lowered down nearer the floor for convenience in working and must be blocked securely with water-line level and also plumb as to the stem. Use care in this leveling up or everything will be crooked and out of line and a bad appearance will result.

Next get out the deck beams and fit them in place, when we can proceed to put on the plank-sheer as shown on plans.

The bitts forward are now to be put in and the gasolene tank can be fitted and secured tightly in place.

The gasolene pipe should now be put in and can be of



the copper tube variety, which can be bent around easy curves and will require only two joints, one at the tank and one at the engine. These joints should be unions and should be carefully soldered where joined to the pipe. This tube should have an inside diameter of at least 5-16 inch, as smaller is liable to stop up easily. A very good rig is to use ordinary brass $\frac{1}{4}$ -inch pipe with the needed elbows and unions. These joints should be threaded and sweated together with solder and only new sharp dies should be used in cutting threads. Too much care cannot be used in making absolutely tight joints in these connections, and they should be thoroughly tested for any leaks and inspected from time to time to see that none develop. This pipe should run along the keelson about halfway up from the top of the frames to the underside of the floor beams and should be secured with a brass strap every 3 feet. Here it is out of the way of things and cannot be damaged or strained readily and can be got at by lifting up the loose floor boards for inspection.

The floor beams can now be put in place and notched down over the keelsons $\frac{1}{2}$ inch as shown, the stanchions for the house sides put up and the joinerwork proceeded with.

The decks can be laid and calked, payed and puttied, as also the floor in the cockpit.

From now on to the finish it is a matter of careful joinerwork, and a thorough study of the plans and detail

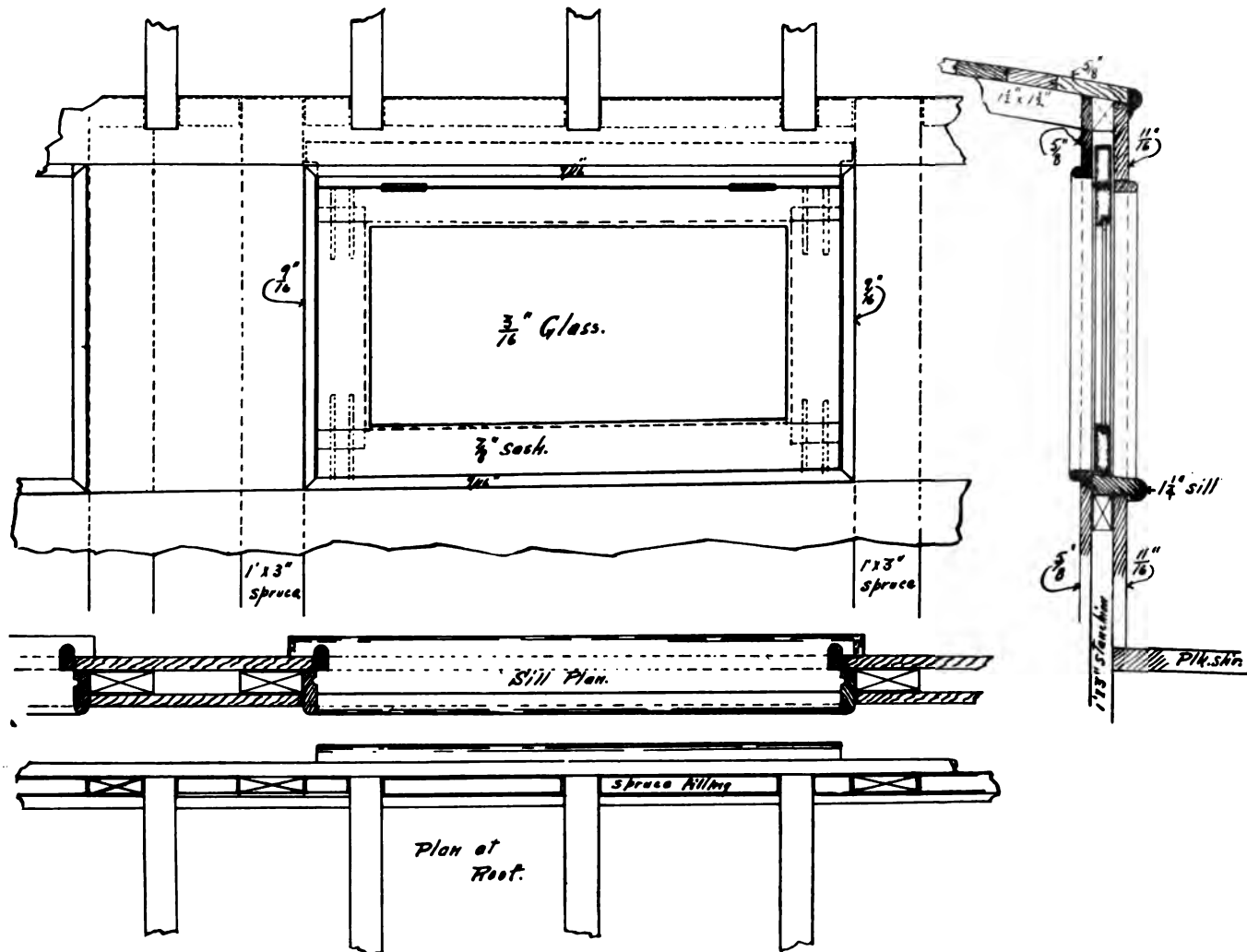
drawings will make things clear to any one who has been able to proceed thus far with success.

When it comes to bending the house beams, which have to be steamed, it will be best to make a mould to bend them over. This mould can be made of rough stuff and consists of a pair of boards cut to the proper curve and lagged across with some short stuff about 15 inches long and 1 inch by 2 inches in thickness.

As the crown to roof is about 10 inches in 8 feet, the mould should have a crown of 12 or 13 inches in the same length, as the frames can easily be opened out when cold to take the proper curve and you can never get them any smaller than when they come off the mould. Also they will straighten out slightly themselves when released. So as the crown to roof varies a little and becomes more in proportion to the width as we go forward, it is well to bend frames a little too sharp and to open out to suit when putting in place. If you have a good brisk fire under your boiler 20 minutes to half an hour should make the oak soft and pliable.

Take them quickly from the box and bend them over the mould, which should have a cleat across the ends at the thickness of the frames to hold them in place. Leave them on the mould till they are thoroughly cold and pretty well dried out. If they are to stand around any time before use, tack a piece of stuff across the ends to prevent them from opening out.

The roof is to be covered with No. 10 duck stretched



Window Construction Details

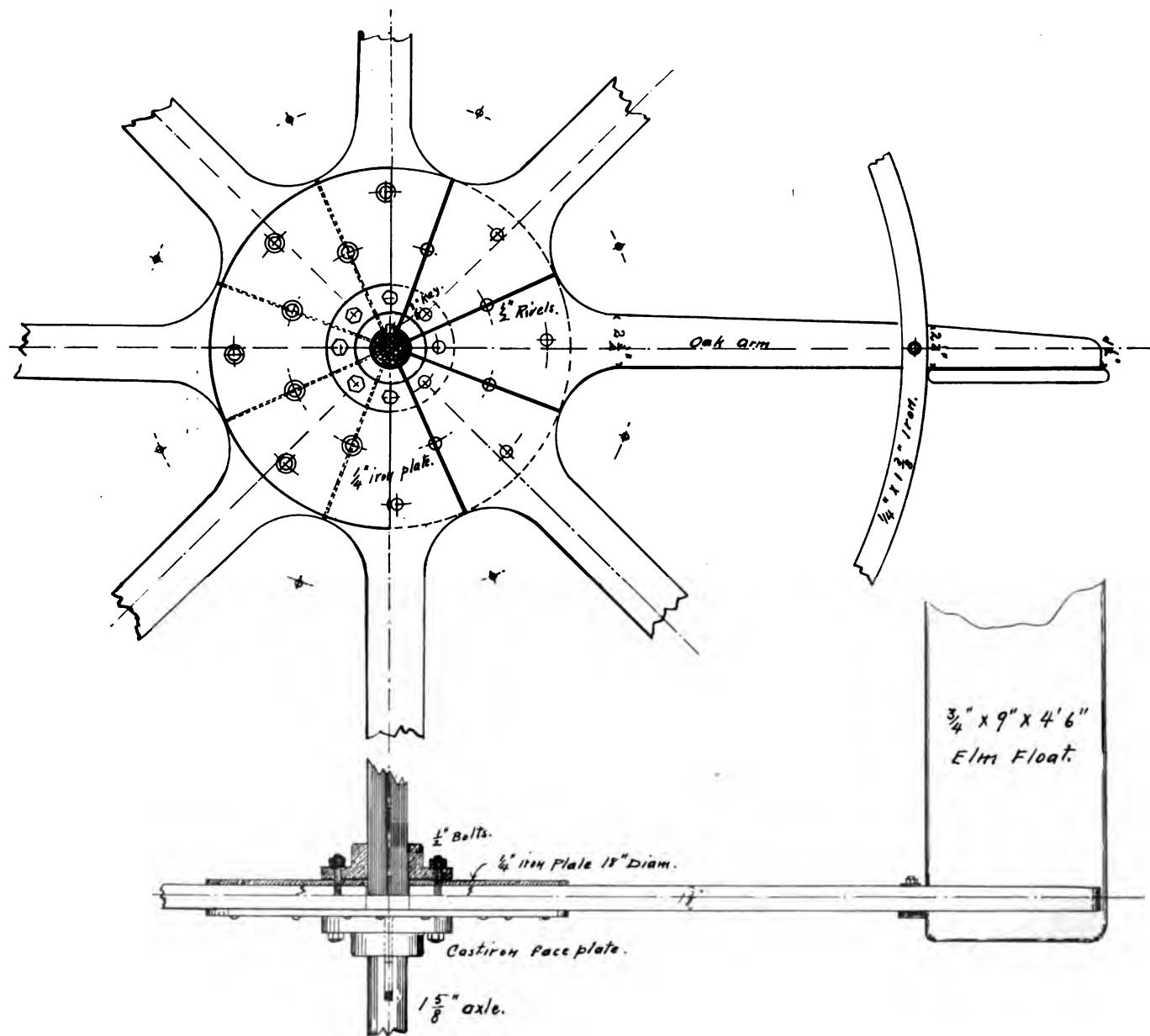
tightly and tacked along the edge under the moulding with copper tacks about $\frac{3}{4}$ inch apart. Where the companion hatch comes the canvas is cut a couple of inches inside the edge and turned up inside the slide arms to form a flashing to prevent leaks. This is covered with a piece of the interior trim for appearance's sake. The slide cover is made of $\frac{7}{8}$ -inch tongue-and-groove stuff to correspond with the rest of the trim and a piece of brass 3-16 by $1\frac{1}{2}$ inch is laid on top of the arms for the slide to run on. A 1-inch brass pipe is sawed in half longitudinally and screwed to the edge of the slide and catches under the edge of the flat brass strip that projects outside the arms and holds the slide in place.

A hand-rail $\frac{3}{4}$ inch thick and 2 inches wide is secured to the roof as shown and finished bright. Roof canvas should receive at least three coats of paint and then can be finished with a coat of varnish, which makes a very good finish and holds the color in the buff paint. Most of the bulkheads shown are of tongue-and-groove and beaded stuff and are easily put in place.

The doors can be made in a mill, which would save a good deal of time and be perhaps more accurately made than if done by hand. Still if you wish you can make these yourself, though it is something of a job to mortise them together, using the same system at the joints in the styles as that shown for the sash in the details. To make a fine finish requires that considerable time be spent in smoothing up the wood, and sandpaper should be freely used. The inside should have one coat of shellac for a filler and two or three coats of a good interior varnish, and be rubbed down between coats with fine sandpaper and pumice stone and oil. Outside bright work should have four coats of best spar composition and be rubbed down, all but the last coat.

The hull below the water-line should have three coats of a copper paint and four coats of white lead paint above the water-line.

If appearance is of no object, the whole boat can be painted outside and in, which would be a great saving of labor, as the woodwork would not need to be finished up



Detail of Paddle Wheel Construction

so smoothly in the first place. The boat of course being just as serviceable, and to many it would appeal more as not being so hard to keep up to the mark.

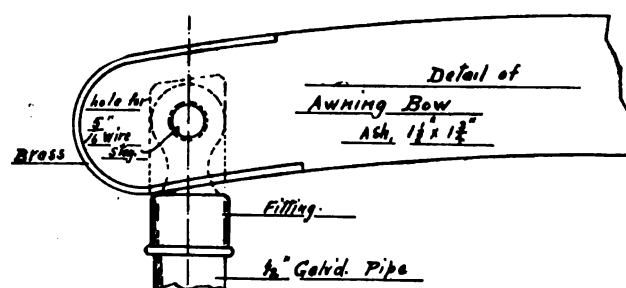
The engine should be of about 20-h.p. and weigh from 600 to 800 lb. It is set up crossways in the boat and geared to a countershaft and thence to the wheel. All this is shown on plans. The engine bed would of course depend somewhat on the make of engine chosen, but the one shown is typical of what it should be in most cases.

The construction of the wheel is also shown in detail and can be built with some slight assistance from a machine shop. The parts, however, are pretty simple and should present no special difficulties. Many Western firms fit up engines and wheels with the necessary gearing for use in these stern-wheel boats, and it might be just as satisfactory to purchase this part of the outfit from them, giving them the diameter and width of the wheel. The speed of the wheel should be from 50 to 60 r.p.m. Of course the engine must be geared down to this speed. In this case it is geared down twice, once to the countershaft and once to the wheel. If the engine runs at 500 r.p.m., this would mean about 9 to 1 as the total reduction, giving 55 turns at 500 r.p.m. The sprocket on the engine having 12 teeth would require a 36-tooth sprocket on the countershaft and again the same proportion from the countershaft and the wheel. The reduction in each case being 3 to 1.

If the engine runs 400 r.p.m. a 32-tooth on the larger sprockets would give same revolutions to the wheel. Any combination can be worked out to suit the designed speed of the engine.

When the boat is at rest $5\frac{1}{2}$ to 6 inches is sufficient dip to the buckets, and plenty of water will come to it when underway.

The wheel housing is built lightly of pine and covered with canvas as shown and should be arranged to be easily removed in case of necessity.

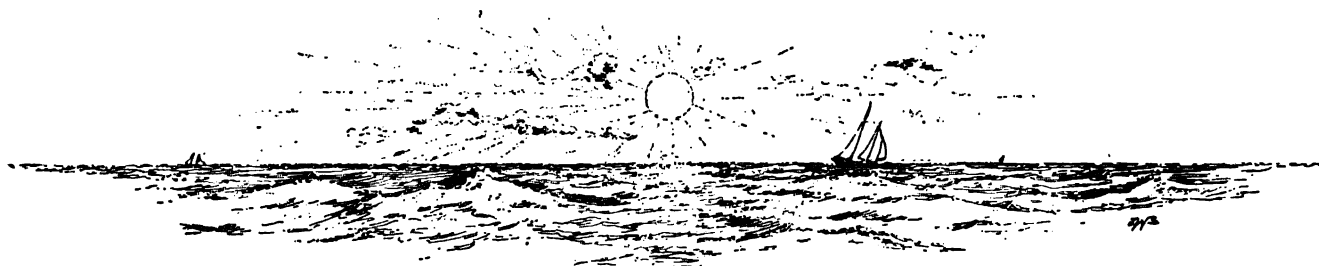


Detail of Awning Bow Construction

The awning frame and bows are quite simple and a strong rig. A wire rope about 5-16 inch diameter passes through the ends of the bows and sets up with a lanyard at the forward end; the rope from the after end making fast at the bow and setting up on the pitman arm with a lanyard also. This wire forms the stay to lace the awning to and a few slats keep it from sagging. The whole can easily be taken down if desired and is very rigid when in place.

There are three rudders and the ironing will have to be made by a blacksmith; $1\frac{1}{4}$ -inch iron pipe threaded into the bottom plank will make the rudder-ports and the stocks should fit easily. The three tillers are connected above deck, as with the outfit shown they would be likely to interfere with the countershaft if placed under the deck. With some engines it might be possible to keep them under the deck.

As practically all the dimensions and material are marked on the different drawings it is unnecessary to go farther with the explanations in this article, as reference to the plans will show. If you have the opportunity to visit a professional builder's shop and keep your eyes open, you will doubtless pick up many little kinks that will be of value to you as you proceed with the work in hand.



SOME INTERESTING BRITISH PRODUCTS

ACROSS the "herring pond" there is a little plot of land called England, and on the port side going in is a small stream—the Thames! On the banks of its estuary, at Erith, about twenty miles from London, are the works of Messrs. Smart & Brown, a small but enterprising engineering firm who are becoming well known over the two halves of the globe for commercial and pleasure engines.

The productions of this firm are not given over to elaborate fittings or "gadgets," but are designed as simple, straightforward jobs that will do the work required in a straightforward manner, with the result that S.&B. engines, when once started, will peg away forever and a day, if required. A few weeks ago the English represent-

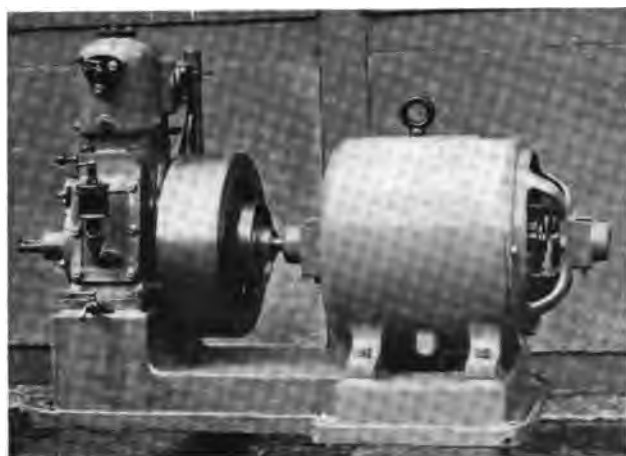
ative of THE RUDDER paid a visit to these business-like works and found much machinery of interest to yachting men and marine motorists going through the shops.

One of the most necessary adjuncts to a yacht is a reliable electric lighting plant, of which Smart & Brown have made a specialty. They are constructed in various sizes, and one of the most popular among yachting men is the single-cylinder 4-inch bore by 4-inch stroke kerosene or gasolene set. It is built to run on either fuel, so is very handy in districts where gasolene is difficult to obtain; in fact, all the firm's engines run on either fuel, a special exhaust heater being provided for the heavier oil. The engine, which is of the four-stroke type, is coupled to a 1,500-watt dynamo and mounted on a substantial cast

iron bed-plate, the combined weight being only 8 cwt. About 4-h.p. is developed at 900 r.p.m., and a governor is fitted preventing excessive speed when running light. The valves are mechanically operated off the half-time shaft, which also drives the high-tension magneto; but if required oil and accumulator ignition can be fitted. Careful attention has been paid to the lubrication system, and there are three separate drip sight feeds to the main bearings, which are fed from a small brass tank fixed to the engine, and the big end of the connecting-rod is fed by a separate lubricator. The cylinder, of course, is amply water-cooled by a rotary gear wheel pump.

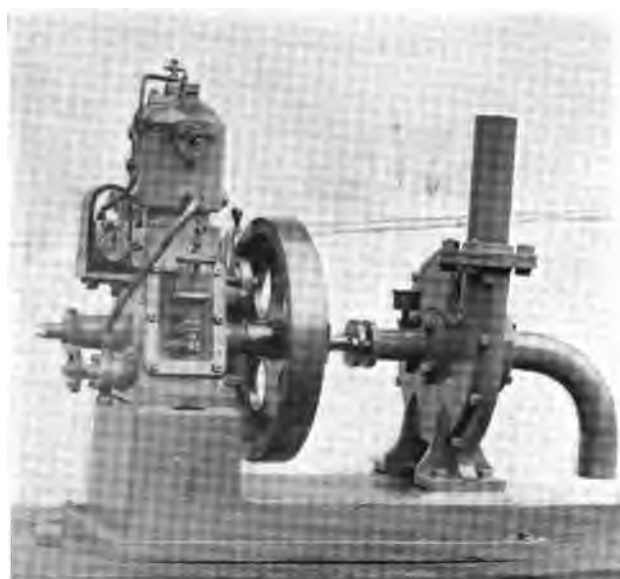
These lighting sets are also well suited for country house lighting, and many yachtsmen have them installed in their Summer residences as well as aboard their craft. The price of the plant complete with spares and tools is \$335, with a reduction for gasolene equipments.

For some time past Smart & Brown have been engaged in designing a simple power winch, and recently have produced a set that is certainly the last word in sim-



Electric Lighting Set

plicity, and it could well be called *Simplicitas*. The same engine as described above is used as driving power, and the equipment is suitable for raising or lowering anchors, unloading vessels, fishing boats, and many other uses. The first of these winches was installed at Messrs. Clarke's coal wharf at Erith, and is used for unloading coal barges. Regularly each day it unloads a 100-ton barge in nine hours, and has saved its cost—\$300—many times over since its installation some months ago. It was fixed, derricks and all, in four hours by the waterman in charge of the wharf, who learned to run engine after half an hour's tuition. Many power winches have trouble with the slipping clutch; but, with the S.&B. winches, the difficulty has been ingeniously overcome by means of four grooves on the friction drum, which interlocks with grooves on the driving pulley, so that control is entirely by one lever. The winch can lift 5 cwt. at 140 feet per minute. A notable feature is that the plant is entirely self-contained, and the hollow bed-plate forms the tank for the cooling water, circulation being maintained by a rotary pump. Over the engine is a double fuel tank of three gallons' capacity, holding two gallons of kerosene and one of gasolene, which is sufficient for about nine hours' continuous running, the gasolene tanks being, of course, for starting up, when the engine is cold. On the

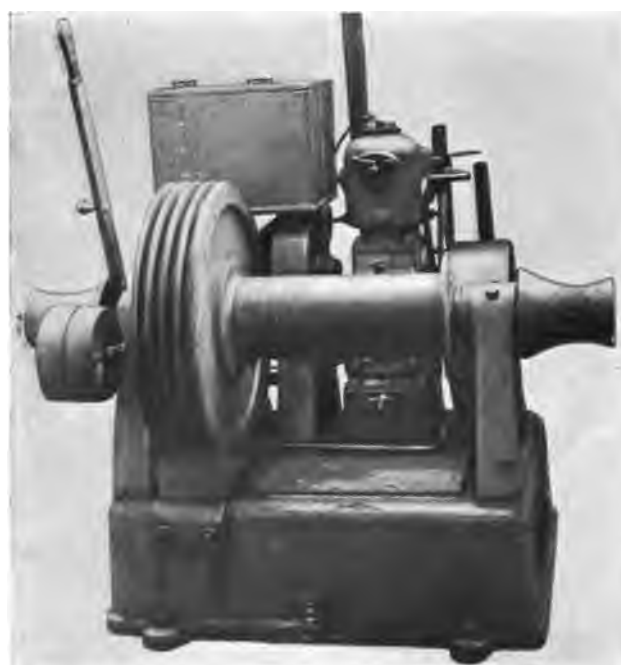


Pumping Set

end of the crank-shaft opposite the fly-wheel is a live pulley to which a belt can be fitted and the engine used for a dynamo, or other machinery.

Although Messrs. Smart & Brown are not boat-builders, they have fitted a large number of pleasure and business boats with engines, both in England and the Colonies, and as a matter of fact they make a large number of kerosene and gasolene types of marine engines, chief of which is the Colonial, a three-cylinder engine of 12 nominal horse-power. The cylinders have a 4-inch bore by 5-inch stroke and 16-h.p. is developed at 1,000 r.p.m. It is of the four-stroke type, with mechanical valves, and is noted for its simplicity and reliability. A noticeable feature is the large crank-case doors for accessibility to working parts.

J. RENDELL WILSON.



Power Winch

MATERIAL REQUIREMENTS OF A HIGH-SPEED ENGINE

Stephen Jencick

THE writer was trained in the shops of the Daimler and DeDion companies, which concerns deserve considerable credit for the improvement and advancement of the high-speed internal-combustion engines, where reliability, efficiency and economy are points considered. The fundamental principles advanced by these companies, after much experimenting with material, design and workmanship, and at great cost in time and money, have not been changed much except in mechanical details. Studying these men by their deeds, nothing can be detracted from their principles, and I shall herewith only try to outline why the use of the best of material for high-speed engine construction pays, giving first the advantages, and then the disadvantage of using inferior materials.

Cylinders should be made of a close-grained cast material with sufficient hardness to reduce wear to the minimum, making them at the same time light in construction and also reliable. On the present market to answer these requirements are semi-steel and vanadium cast iron. These are of a comparatively high tensile strength, fine-grained, uniform in hardness and resisting wear to a maximum extent under the heat conditions which exist in this class of production; maintain their true diameter and consequently give high efficiency for a long time. Cylinders made of gray cast iron are very low in tensile strength, material being porous and, consequently, leaks will occur sooner; wear on same the first or second year is noticeable. This leads to loss of efficiency, and there is a tendency for the cylinders to rip off their foundations, especially if light weight is desired.

Pistons, according to present practice, should be made of the same material as the cylinders. By using semi-steel or vanadium cast iron we obtain a very light piston of the same type of the cylinders made out of this material. Considering a four-cylinder machine, where the pistons are made out of a poor material; a set of four weighing four pounds more than if made of the better material; if this is multiplied by the revolutions of the machine, the actual loss in foot-pounds will be obtained per minute.

I consider that every crank-shaft in due time will break, due to the deflection caused by the various forces applied to it during its cycle. Of course it is known that all manufacturers are looking for a highly elastic steel or material to resist crystallization, for just this reason. Krupp chrome nickel steel and vanadium steel, both oil-hardened, are the two best known steels for this purpose; nickel steel follows and then carbon steel. From actual experience I consider that the Krupp chrome nickel steel gives the best all-around satisfaction. The tensile strength of this material in an oil-hardened state is 135,000 lb per square inch and its elastic limit 114,000 lb. The vanadium steel people claim very nearly as much and the

nickel steels run to about 90,000 lb; carbon steel between 70,000 and 80,000 lb. Take Krupp chrome nickel steel as it is in cam-shafts, wrist-pins, push rods, etc., which are case-hardened, and the tensile strength raises to 230,000 lb and the elastic limit to 220,000 lb per square inch. Looking at these figures it does not require expert judgment to come to the conclusion as to what material is most suitable for high-speed internal-combustion engine construction.

The main objection to the use of chrome nickel and vanadium steels is the price, but where the object considered is to construct a machine which will maintain its efficiency for a longer time than one or two years, it is advisable to use the best materials which can be obtained on the market. It is not only due to their strength that the higher grade of materials is used, but also because of their wearing qualities. For instance, we can take a nickel steel shaft and oil-harden it and it will not attain the same hardness as the chrome nickel; consequently in a short time this shaft will be worn oval, where the Krupp chrome nickel steel shaft will retain its true diameter. The result of the oval shaft is that pounding takes place and bearings are destroyed.

The ideas brought out on these few parts are in general those which govern the use of material in constructing the balance of the machine.

I have at all times been a believer in making the cam-shafts and cams integral, especially as a practical working demonstration shows that it is not more expensive than to cut the cams separately and pin them on the shaft. By having cam-shafts and cams integral, once a division is made in the dividing head of the milling machine or miller, the chance for a cam being out of position is a great deal less than it is when cutting keyways in cams and shafts both and fitting keys to them. One must realize that one-half or even one-quarter degree is considerable difference on the cam-shaft, and if the position of the cams is not regular or in unison, a very smooth-running machine cannot be expected.

Taking the foundation of the machine, whereon all parts are mounted, it is highly essential that this structure should be out of strong material. I believe in the use of manganese bronze for this purpose; it having a tensile strength of 72,000 lb per square inch where a good grade of cast iron runs from 26,000 to 28,000 lb and that of aluminum at the maximum, 24,000 lb. Considerable spring is found in cast iron and aluminum, whereas in manganese bronze this spring is not so apt to occur, and consequently, such parts as the crank-shaft supporting bearings, cam-shaft and other bearings mounted therein, remain in their true position, and no binding can occur. This material is about two-thirds heavier than aluminum, but by using the proper construction, can be made so that it does not weigh nearly half as much again as aluminum

and at the same time be three times as strong. In machine construction where a constant load is maintained on a machine, I have found this to be the most serviceable known cast material for this purpose.

Coming finally to the small bearings, such as cam-shaft, pump, magneto, timer, intermediate gear bearings, etc., it has been proven that by mounting these on annular bearings, better satisfaction is obtained, as they will outlast any plain bearing made of any material, and being practically frictionless, require very little lubrication and being more dependable in every way than the plain bearings. These annular bearings have been used on automobile crank-shafts in many makes of cars, but we have a different condition here, due to the intermittent load,

which has to be considered, and it has been proven if we can make these bearings of sufficient size, they are practical for crank-shaft purposes. For marine purposes, however, this tends toward a heavier construction than is the case where plain bearings are used, due to the difference in diameters and the necessary conditions which have to be considered relative to mounting them on crank-shafts.

The above points are merely a few that I believe the builders of high-speed internal-combustion engines will have to take into consideration in the near future, as it cannot be denied that good material is more reliable, efficient and economical when operating cost is considered.



AN AMERICAN COMMERCIAL PRODUCER-GAS BOAT

THE producer-gas boat Helene, in operation for the last three or four months around New Orleans and Gulf ports generally, has created a great interest among the power-boat users in that section, owing to her extreme economy and steady commercial service.

Helene is 50 feet over all, 14 feet breadth, draws 4 feet of water and is equipped with a marine gas producer rated at 25-h.p., made by The Marine Producer Gas Power Company. The producer is 2 feet 6 inches in diameter and 4 feet 8 inches high, and operates a three-cylinder, four-stroke engine of 6½-inch bore, 8½-inch stroke, turning a three-bladed 32-inch diameter propeller with 34-inch pitch, 395 r.p.m. on ordinary runs. This engine speed can be increased to 410 r.p.m. when necessary, the boat averaging under usual conditions 10 statute miles an hour.

The plant is very compact and handled entirely by one man. The picture of the interior as shown was taken before the inside of the boat was finished, to give a clearer view of same. This engine develops 32 b.h.p. at 390 revolutions. The producer, shown directly aft of the engine, is capable of making gas for the engine to its maximum power, which is about 35-h.p., without taxing the producer beyond its normal capacity.

On a run of slightly over 200 miles, made in 21 hours, 680 lb of coal was used. Part of the run was made in the Gulf of Mexico during extremely rough weather with heavy seas running. The producer was filled on the average of every two hours and required from three to five minutes' attention during these filling periods, in shaking the grate and occasionally poking the fire from above. Between these intervals no attention was given the outfit.

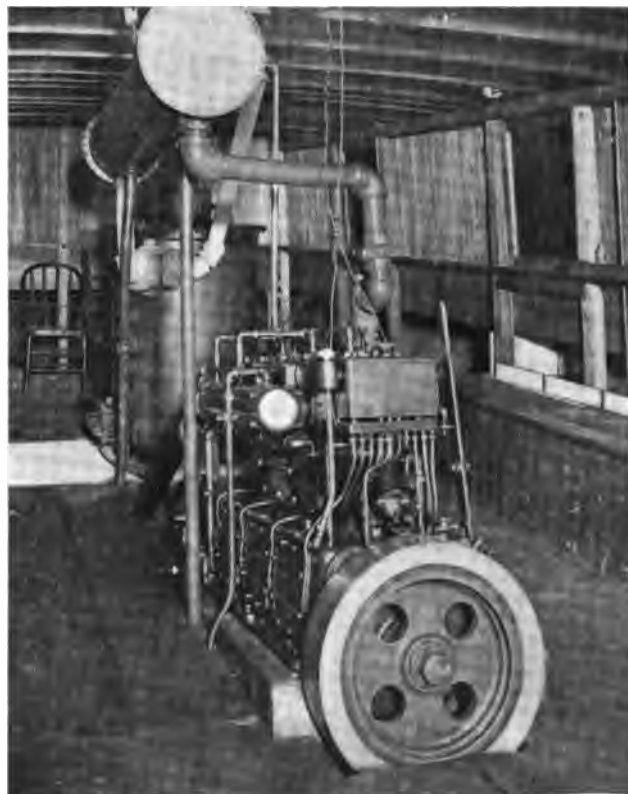
The engine is equipped with a governor which is controllable in its speed from very slow to full speed, making it a very convenient installation for making landings, etc., by simply handling the reverse lever and paying no further attention to the engine.

The gas cleaner will be noted above the engine and producer, showing the gas pipe leading from same. The mixing valve is seen above the oiler of the engine. The gas and air is mixed at this point and the amount of gas made is controlled entirely by the suction of the engine.

The compression of this particular engine was raised from 65 to 100 lb, as it was originally built for a gasoline

engine, absolutely no other changes being made on the machine. A great many people going aboard this boat have been agreeably surprised at the absence of objectionable heat around the producer, and also the absence of all gas smell sometimes found in a gasoline engine room.

The owners of this boat state that they have her in continuous freight and passenger service, and are showing very profitable results on routes that it did not pay to operate with gasoline, and they are now having plans drawn for other boats to use the producer gas, to cover their routes. They claim that they operate this boat from between 11 and 12 hours daily at a cost of \$1 per day,



Engine and Gas Producer Installed in Helene

though the price of coal is comparatively high in that section (\$8).

During the recent Mardi Gras, for which New Orleans is famous, the boat was in constant operation on the Mississippi River taking passengers to and from the warships, during which time she came under the notice of many of the naval officers, who had been watching her from day to day.

The owners of Helene state that they have not had a minute's trouble with the operation of the plant since its installation last Fall, though it is the first producer-gas plant that their engineer has operated.

The following log of an 8-hour run, made by the engineer in charge, during which about 65 miles was covered, a number of landings made, and a schooner taken in tow for a short period, is interesting in that it shows the number of times coal was added to the producer and, in fact, shows the handling of the plant. On this particular trip about 240 lb of coal were used.

LOG OF HELENE'S ENGINE

A. M.

- 9:30 Started filling the producer and blowing.
- 9:50 Gas rich enough and started engine.
- 9:55 Left shipyard. Engine running smoothly at regular speed.
- 10:15 Arrived at West End. Stopped at wharf; kept engine running free. Took on supplies for the day.
- 10:42 Left West End wharf.
- 10:45 Put two pails of coal in producer. (14-lb pail.)
- 11:10 Passed Millenburg Light. Sliced fire. Added two pails of coal.
- 11:13 Opened engine to full speed.
- 12:05 Added two pails of coal.

P. M.

- 12:55 Passed through South draw of Northeastern Bridge.
- 1:00 Sliced fire. Added two pails of coal. Engine at full speed.
- 1:15 Examined fire. Everything soft. Engine running beautifully.



Side View of Marine Producer Gas Power Co.'s Producer Installation

- 1:40 Added two pails of coal.
- 2:01 Turned abreast of Rigolets Light, 29¾ miles from shipyard by chart.
- 2:05 One pail of coal added.
- 2:50 Passed through North draw of Northeastern Bridge, 29 miles from this point to shipyard.
- 3:00 Sliced fire; added two pails of coal. Engine running full speed.
- 4:05 Added one pail of coal.
- 5:00 Sliced and poked fire. Added three pails of coal.
- 5:17 Stopped West End to get something to eat. Kept engine running free.
- 5:32 Left West End.
- 5:40 Took schooner in tow.
- 5:58 Dropped tow.
- 6:00 Arrived at shipyard, the starting point. Put in one pail of coal, leaving producer in as good condition in regard to cleanliness as she was when started in the morning. Producer in condition to keep the fire and be ready to start engine again in 12 hours without adding coal.



Helene Equipped with 25-H.P. Gas-Producer. Made by The Marine Producer Gas Power Company of New York City

HOW TO BUILD A CENTERBOARD TRUNK, CENTERBOARD AND RUDDER

Fred. Wm. Goeller, Jr.

FREQUENTLY this subject is passed over lightly in descriptions of "How To" articles, but it is a detail which very often bothers the amateur builder.

It is assumed that the position and size of the centerboard have been decided upon and it is the intention of this article to show only the manner in which these parts are constructed.

The size of the centerboard slot should be made only wide enough to allow the board to move up and down easily without jamming—allowance, of course, being made for the board swelling after it has been in the water. Do not make it too wide, as little chips and bits of seaweed become lodged in the trunk, and as they accumulate quickly they soon make it impossible to move the board either up or down. For example, in a board $\frac{7}{8}$ inch thick, the slot should be about $1\frac{1}{8}$ inch wide.

The length of the slot is governed by the manner in which the board is hung, as well as its length. A description of a few of the methods used will be given later.

The trunk is of course made with an upright at either end, the exact width of the slot and wide enough fore and aft to take the rivets and also to form a good landing for the side pieces (to prevent any twisting), and the trunk logs and side pieces which are riveted to them.

The uprights are usually fastened to the keel in the following manner: The after side of the forward and the forward side of the after upright being the limit of the slot, the dovetails for these are made accordingly. The dovetail is made as shown in Fig. 1 and where pos-

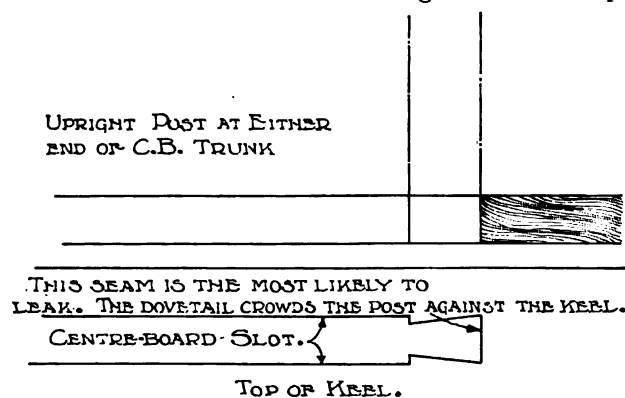


Fig. 1. Detail of Dovetail for Centerboard Trunk Uprights

sible a pin should be put through the keel and upright. After the hole is bored through the keel, place the upright in position, pressing it down firmly in place and mark the spot where pin comes. Then remove the post and bore the hole through it just a little above the mark so that when the pin is driven through, the tendency will

be to draw it down firmly onto the keel. If it is impossible to do this, another method is to put a long screw through the post endwise into the keel; but this method is not as good as the first mentioned, for the screw does not hold as well in the end wood nor does it tend to pull down as well.

A very good plan is to make both posts—the forward one being straight and the after one curved to the proper radius—wide enough so that the dovetail may be made sufficiently long and still leave a shoulder to rest on the keel.

When the posts are fitted, heavy paint or white lead should be put on the end and in the keel and the whole fastened together. If this is done carefully there should never be any leaks. As this is a very awkward place to make tight, once it does leak, this job should not be slighted for the sake of a few hours' time.

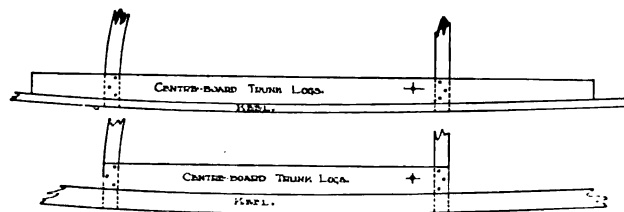


Fig. 2. Showing Long Trunk Logs on Thin Flat Keel and Short Ones on Heavy Keel

The bed logs, as the pieces on the side next to the keel are called, are then first fastened to keel, with screw bolts preferably, with a thin strip of cotton or wicking and plenty of white lead between, and then riveted to the posts. The spacing of the bolts or rivets should be such that there is no possible chance of either the keel or logs opening up between and causing a leak.

In a boat with a wide flat rocker keel it is a very good plan to run the trunk logs well forward and aft of the posts, and fasten them along their entire length—as this forms a very strong backbone and holds the keel in shape. Of course in a boat with a deep keel this is not necessary.

The trunk logs should be made considerably heavier than the rest of the trunk. For a centerboard in the neighborhood of 5 feet long the sides would be about $\frac{7}{8}$ inch thick and the trunk logs $1\frac{1}{4}$ inch thick.

The space between the bed logs and the top of the posts should be divided up evenly in spaces not over $4\frac{1}{2}$ or 5 inches wide and these should be the widths of each plank. The reason these are made so narrow is that the regular auger bit with which the holes are bored for the dowels is not over 7 inches long and when bored from the top of one plank into the next lower, they only go into the plank about $1\frac{3}{4}$ inch.

In putting on these side planks the fitting of the edges should be done very carefully. The top of each plank is planed up straight and true and the bottom is made slightly rounding—not over a sixteenth of an inch—and with plenty of paint and a thin strip of cotton up the posts and along the top edge of the lower plank, clamp the forward ends against the post and force them down hard. Rivet up this end before removing the clamp. Then clamp up the after end and force it down until it is perfectly tight and rivet it before the clamp is taken off as in fitting the forward end.

By making the bottom of each plank slightly rounding and fastening it as described in the foregoing paragraph a perfectly tight job is assured. Divide up the space between the posts for the dowels so that they do not come more than 15 inches apart and bore the holes so that the dowels *toe in*. These dowels need not be spaced evenly, as the greatest strain comes a little way back from the forward post and the dowels above should be staggered—not spaced one over the other—in order to hold each side rigid. In this manner a strain at most any place on the side of the trunk is taken care of. Where the hole is bored through one plank into the one below, the dowel should be cut off so that when driven in it is about half in one plank and half in the other.

These dowels may be made of either round brass, bronze or galvanized iron rod, the latter of course being the cheapest and answering the purpose as well as either of the other metals.

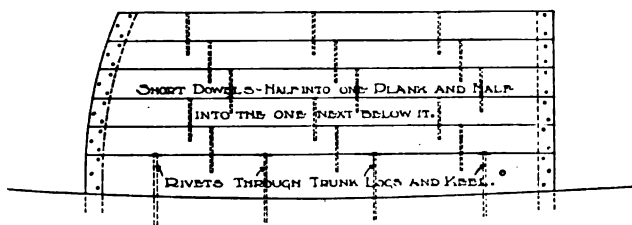


Fig. 3. Showing How Sides of Centerboard are Doweled

The position of the dowels should be marked on the side of the trunk so that in boring for the ones next above the positions may be determined so as not to strike in the same hole. This method is followed for each plank up to the top.

In most cases a cap is fitted on top of the centerboard trunk, which is simply a piece across the top sufficiently wide so that the edges project beyond the sides of the trunk, and are usually rounded off. A slot is of course cut in it wide and long enough for the board to come through. This cap piece is screwed down onto the trunk proper. The sides of the trunk, for the sake of appearance, are sometimes paneled.

It sometimes happens, where a boat has a shallow fin and outside ballast, that the centerboard does not come above the cabin floor and the pennant is led through a pipe to a point above the water-line. In this case the slot is cut in the keel and dead-wood and they are bolted up in the usual manner.

In the opinion of the writer there is only one way to make a centerboard and be sure you are going to have a job that will last and that is to have the dowels go from top to bottom in one piece, riveted at both ends. This would seem a very difficult job, but when correctly performed is not much harder than the short dowel method. Most every centerboard, being wider at the after end than at the forward, the first step in its construction is to lay

out the lumber so that the board will come to the proper shape.

An example will perhaps best explain what is meant. Supposing we have a board 5 feet long and about 24 inches high at the forward end, and 36 inches high at the aft end, this will require 15 linear feet of $1\frac{1}{8}$ -inch stuff—the boards being finally finished to $\frac{7}{8}$ inch thick, 10 inches wide.

These planks will of course be cut off in 5-foot lengths and each one is cut so that two pieces are gotten out with one end $3\frac{1}{2}$ inches wide and the other $6\frac{1}{2}$ inches, the cut of course being diagonal and not parallel to the sides.

When the planks are cut there should be six pieces—wedge-shaped—and they should be laid out on a flat surface. The lower board is laid with the wide end forward—so that the hole for the pin will come in the one plank—and all the upper boards are placed with the small end forward.

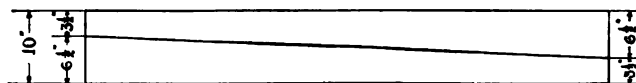


Fig. 4. Showing How a 10-inch Plank is Cut Diagonally to Build Up the Centerboard to the Proper Shape

There will then be five pieces $3\frac{1}{2}$ inches wide or $17\frac{1}{2}$ inches plus the wide one on the bottom, $6\frac{1}{2}$ inches, making the forward end 24 inches high. The aft end being 36 inches high, i. e., five pieces $6\frac{1}{2}$ inches wide, and one, the bottom, $3\frac{1}{2}$ inches wide.

The boards being laid out this way, they should be marked 1, 2, 3, 4, 5 and 6, starting either from the top or bottom—it doesn't make any difference—and the edges jointed up. The way to get the edges to fit accurately is to first plane up one edge square, on one plank. The next plank is then planed up square and placed edge to edge with the first one. Any hollows or lumps may then be seen and planed out.

When two edges—top of one and bottom of the other—are matched, true and square, they should be marked and the next plank is fitted in the same way.

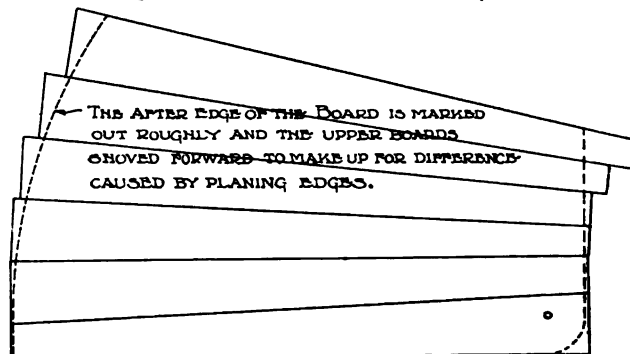


Fig. 5. Showing Planks for Centerboard Laid Out in their Proper Positions

All the planks having been jointed in this manner, they are again laid out on a flat surface, in their proper places, and the position of the hole for the pin, the forward edge, and the round of the after edge are marked.

The lines showing positions of the dowels are then marked across the board. In the case referred to above four dowels are used, the three forward ones being about square with the bottom of the board and the last one at such an angle that the dowel will be about the same distance—top and bottom—from the aft edge of the board.

Next take each board separately and bore it. A line should be squared across the board or plank where the

dowel marks are, top and bottom, and the center marked with a marking gauge. The holes should be bored from both edges. In this way, if the holes do not meet exactly from both sides, they can be reamed out, and when the dowels are driven in the edges should match fairly well, and not have one high and the next low, as the case might be if the holes were bored clean through from one edge.

When boring these holes it is a good plan to clamp an upright to the piece being bored, as a guide, as it is more important that the holes are bored correctly sideways than in a fore and aft direction.

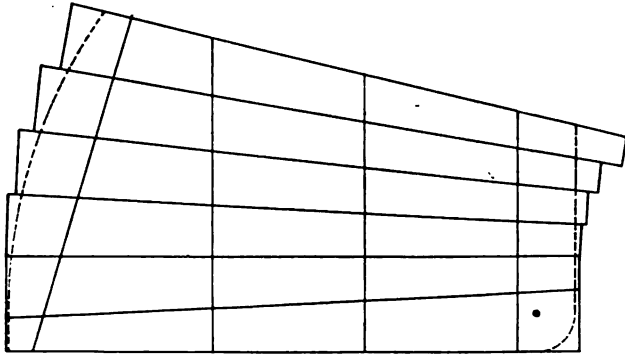


Fig. 6. Line of Dowels Marked Across Centerboard

The holes being bored, the planks are again laid out in their proper positions and the dowels cut to the proper length. Allow about a quarter of an inch on each dowel for riveting.

The first three dowels are then driven through the bottom plank—the last one being on an angle is not driven through until all the planks are together—and each plank above is then driven on separately.

When the dowels are all in place the board should then be planed off smooth. No matter how carefully the holes are bored there will be places where the edge of

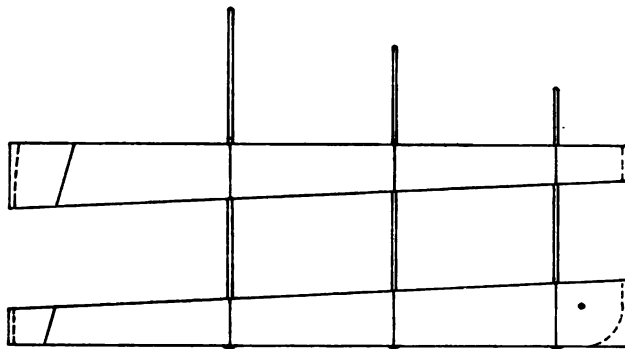


Fig. 7. Showing How Straight Dowels are First Driven Through Bottom Board and How Each Board Above is then Driven Down into Place

one board is higher than another and a straight edge should be used, both across and diagonally, to true up the board and to work out any wind that may have occurred.

In taking off the rough places the quickest way is to use a Burrough plane—one with the face rounded—across the grain, finishing up with a jack plane, set fine, in a fore and aft direction.

The forward edge of the board is then cut off to the proper shape, as is the after edge. The latter is usually pointed slightly, and in a great many cases a half round band is fastened on to tie the end together, and the bottom is also usually rounded, so as to offer as little resistance as possible.

There are a great many different methods of hanging

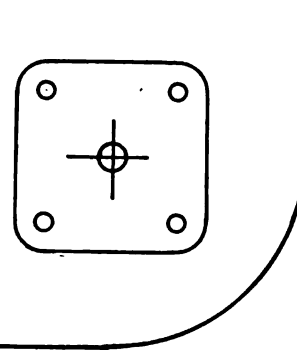


Fig. 8. Plates are Sometimes Rivited to Both Sides of the Board to Form a Bearing for Centerboard Pin

the centerboard, the most common of which is a hole through the board and a bolt through the trunk, on which the board hangs at the forward end. In this method some sort of metal bearing is fastened to the board to prevent the hole from becoming enlarged. Sometimes plates are put on the sides, but probably the simplest way is to get an iron nipple, the inside diameter of which is slightly larger than the bolt to be used, and screw it into the board, cutting off the extra length which projects beyond the sides of the board. In some cases where a new trunk has been put in and it is impossible to bore a hole low enough a special hanger will have to be made. A simple way to make one is to take a piece of T iron, making sure that the top of the T fits in the trunk, and cut off all except a short piece near the bottom of the upright part of the T. The illustration shows how the top and bottom are turned over and fastened to the upright post and bottom of the keel respectively.

Two straps are fastened on the centerboard with the ends bent in together, allowing just enough space to fit over the angle iron and a bolt is then put through.

In a case of this kind the hanger will, of course, have to be fastened to the centerboard before the latter is put in the boat.

If the boat is on land the board may be put in from below by digging a pit for the purpose—and of course if the boat is overboard it can usually be put in from above, putting the after end down first and then pushing the forward end in place.

The manner of hauling up and lowering the board depends largely on its size. In any case the best method of fastening the pennant to the board is to rivet two straps on either side, close to the after edge, with the top ends projecting enough above to get a pin across, through a thimble, and to splice the rope around the latter.

In small boats of course the board may be pulled up by hand, but with a large centerboard a block and fall, or jig as it is usually called, is fastened to the pennant after

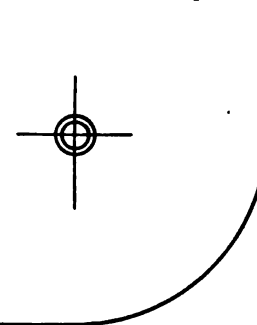


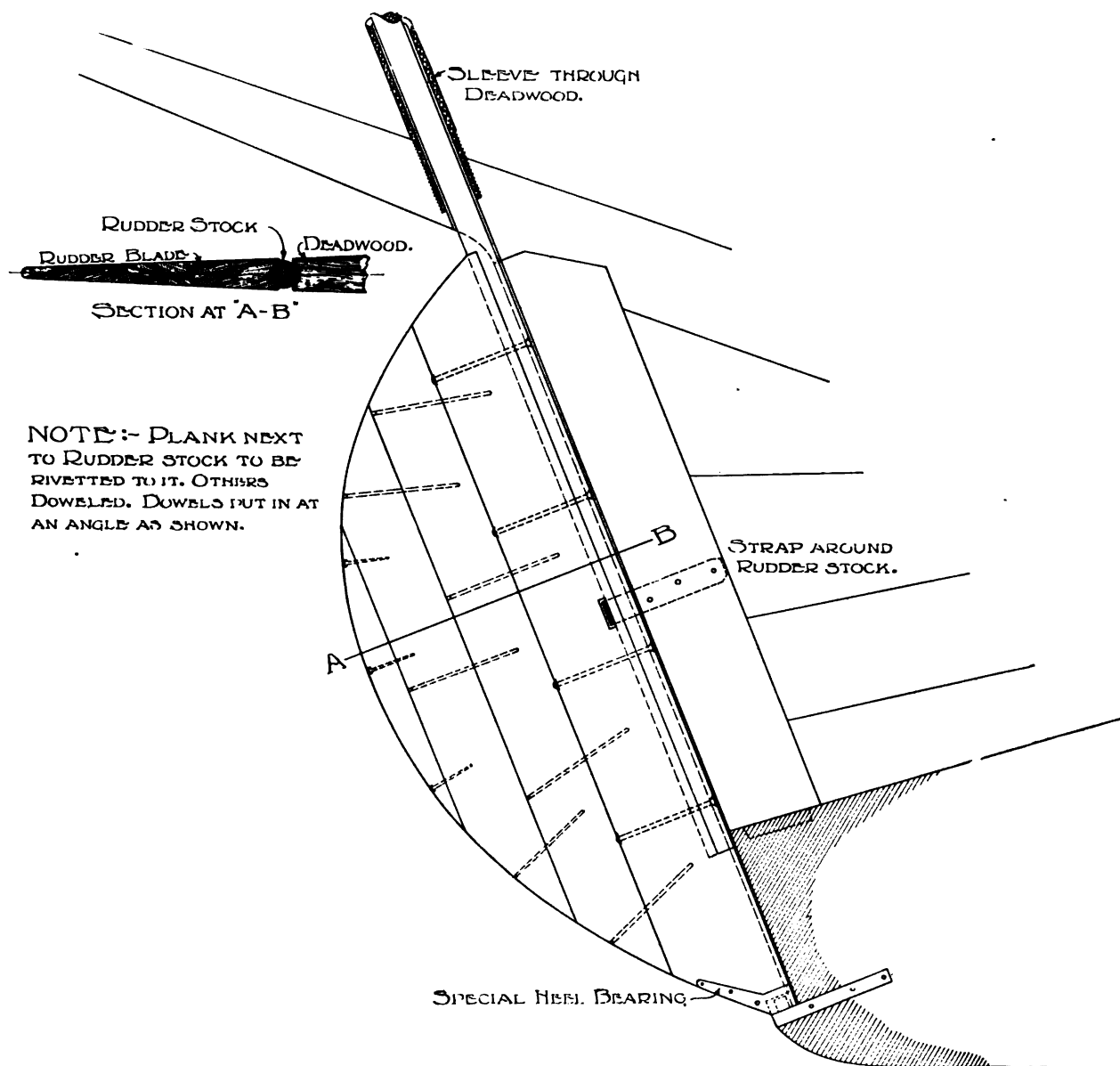
Fig. 9. Another Method for Pin Bushing is to Screw a Nipple into the Board and Cut off the Ends Flush

7" IRON-GALVANIZED-
1" PART CUT OFF EXCEPT AT
BOTTOM AS SHOWN.

STRAPS ON
CENTRE-BOARD.

NOTE:- CONSTRUCTION
SIMILAR TO SAILBOAT
RUDDER

Fig. 10. Special Hanger for Centerboard



Special Fitting for Hanging Centerboard and Two Types of Rudders, Sailboat and Launch

the latter has been led over a sheave on the under side of the cabin top.

Another way is to haul up the board with a small windlass fastened to the after end of the trunk. When this is done the pennant is usually fastened to the board low enough down so that the board may be hauled up to its proper height, thus permitting the top of the centerboard to be hauled above the case and completely housed in the trunk.

There being so many different styles of rudders, I will only take two as examples, as they should pretty near cover, in a general way, the usual method of construction. Most sailboats nowadays having an overhang stern, I will first deal with this type.

The rudder post is of course round and may either be made of bronze or wrought iron galvanized, of suitable diameter for the size of the blade and size of the boat.

The blade of the rudder is constructed of wood and the boards are laid out and their edges trued up. The rudder blade being nearly symmetrical the planks are parallel and not tapered as in centerboard construction.

In laying out the dowels the same procedure is followed as was used for the centerboard. The planks are all laid out with the edges trued and line of the dowels marked across. Each board is then taken up separately, the line squared across both edges, the center marked with a marking gauge and the holes bored from both sides.

In this particular case the dowels do not run through in one piece. Short dowels are used and a smaller diameter dowel is used for each plank, working away from the stock.

The plank next to the stock is riveted to it. The rest of the dowels just go through one piece into the next, and are toed or put in at an angle. It is then impossible for one plank to pull away from another.

The reason through dowels are not used is that the after edge of the board is tapered quite thin and the heavy dowels necessary near the stock, if run through would come out the side or leave very little wood there.

The rudder is built up from the stock. The piece next to it is first riveted up. The next plank is then fastened on, the next and so on. Where only a narrow piece is needed to fill out as shown in the drawing it may be nailed on.

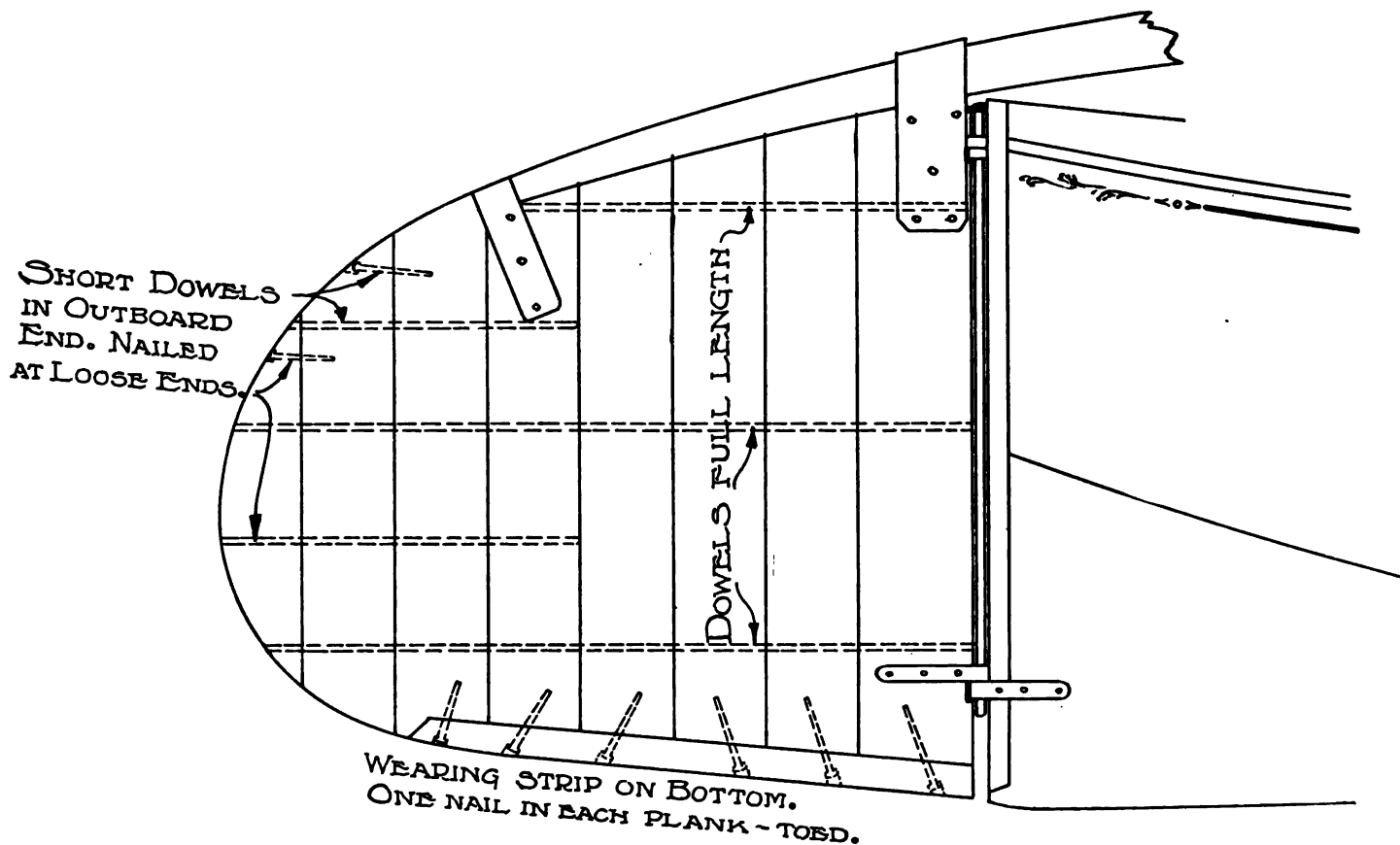
The other general type of rudder is that used on either an old-style sailboat or some of the modern launches with square sterns.

With the exception of the metal stock the description of their construction is simply a repetition of the foregoing.

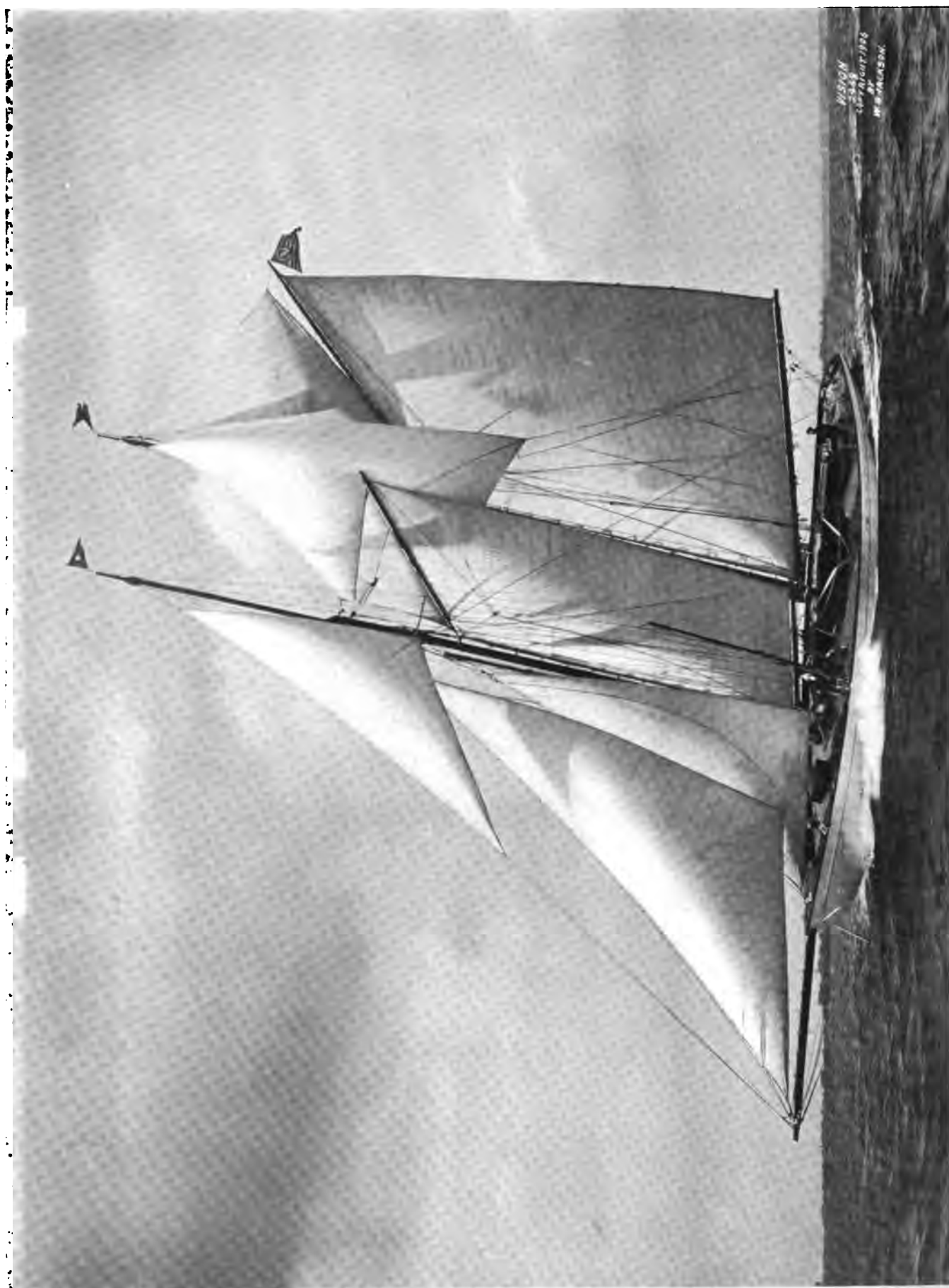
The layout of the stuff, marking for the dowels, boring and driving the board together is done in the same manner.

On the sailboat rudder the metal straps for the tiller are the neatest. In launch work a wooden head is most used as there is only one socket, and it carries out very well.

There are a great many different ways of hanging rudders. The methods shown are as simple as any, and as no special fittings are called for I should recommend them for ordinary use.



Rudder Suitable for the Ordinary Square Stern Sailing Craft



Vision. Sixty-four Feet O.A. Owned by Henry A. Moras

THE OLDMAN'S MAIL BAG

SOME LETTERS FROM MEN OF HIS CREW WHO ARE STANDING BY TO KEEP THE OLD PACKET EATING OUT TO WINDWARD

HONORS FROM CHINA

I have much pleasure in informing you that at the annual general meeting of the Shanghai Y. C. you were *unanimously* elected an honorary life member of the Shanghai Y. C., as a token of our appreciation of all the good you have done for yachting, and especially for the way you have fostered the true Corinthian spirit in yacht racing. THE RUDDER is always looked forward to here, and as each number comes in they are eagerly scanned for suitable plans and designs, as many of the boats appearing therein are especially suitable to these waters. A fair-sized boat described in THE RUDDER some years ago was a 55-foot schooner, Clio. I believe this boat would have suited these waters, but unfortunately the lines were not published. Another large boat that was suitable for here was a 52-foot schooner by Carlton Wilby, appearing in a March RUDDER. Of this boat you published most excellent construction plans and lines. As for the smaller boats you have published designs of that would be suitable for these waters there is an endless list of them, and they have been very useful to our members. The fishing schooner Pelican, 52 feet, was also a nice little boat by Mr. Schock, not too deep for these waters. In fact, yours is about the only yachting publication we have that we can look forward to for designs that we can build from.

It is a great pleasure to me to be able to inform you of this small token of our appreciation,

CHARLES E. LINTILHAC,

Commodore Shanghai Y. C.

* * *

FROM KANSAS CITY

Your favor to our secretaary was just handed to me. We have no printed club book, but if you will let me know what you want I will be very glad to get it up for you, for we launch men out here prize THE RUDDER highly, for we know when we see a thing in THE RUDDER it is so, and that they don't put any fake records over on you.

J. E. GUINOTTE,

Pres. Kansas City Y. C.

* * *

A HAIL FROM WASHINGTON

I do not subscribe to THE RUDDER, because I have a senseless antipathy to subscribing to anything, but I have bought every number since my interest in the sport was first aroused, two years ago. I shall keep on buying it, just as I shall keep on buying regularly all yachting papers, because I can't get enough of them in the dreary interim while my purse is filling for that boat of my own. Nor shall it be "a gasoline cruising yacht," but something on the order of a trim little 70-foot schooner that a man can ship in for deep-water fun.

I am writing this, however, to congratulate you upon the Fitting-Out Number, and to pass on to you the idea which came to me when I saw the cover. The little col-

ored print is most attractive and salty. Next year give us something of the same sort, but instead of using a square mask let us look at the thing as though through an open port, which would be a bit more ship-shape, don't you think?

I am always greatly interested in your own department, *Around the Clubhouse Fire*, not so much for its subject matter as for the splendid nerve you are showing; the energy and optimism and health that you are devoting to the sport. It must be an up-hill fight; a disheartening struggle with ingratitude and selfishness, relieved by very little profit. I am an ink-slinger myself, and I know too much about the magazine business to have any idea that you are making a fortune out of THE RUDDER. More likely you are having about all that you can do to hold your course, and you hang on because you love the sea and its interests, almost as much, if not more, than you do your own interests. I imagine that you are a good deal of a man, and the world can't get too many of your sort. Sometimes I smile at the skipperish way



Mr. S. E. Saunders, Builder of Some of England's Fastest Power Boats, Among Them Pioneer and Ursula

you order your crew about, but then it's for their own good, and no kick coming.

This is just a friendly letter to dip flags; don't bother to acknowledge it; tear it up. And keep on with the good work!

AUBREY LANSTON.

* * *

Royal Kennebecasis Y. C.,
Saint John, N. B.

I have the honor to inform you that at the regular quarterly meeting of our club, held last evening, you were elected an honorary member of our club, in recognition of your efforts to advance the interests of yachting, also for the many favors which you have extended to our club in the past.

I herewith enclose you membership ticket for the current year.

H. W. STUBBS,
Secretary.

* * *

FROM AN OLD READER

Noticing some months ago a request for articles on yachting trips, or matter of interest to yachting men, I am writing to inquire if an account of a trip down the Chesapeake Bay, on an oyster schooner, made by me last Fall, would be considered available for *THE RUDDER* or *Cruiser*. If you care to see it, and like it, I would be glad to donate it.

While I am writing you, I want to say that I am a staunch supporter of your magazine. I have purchased of your advertisers, The Pennsylvania Iron Works Company, Chas. D. Durkee, and McClellan, of Fall River, more than two thousand dollars' worth of goods this last year, and have been buying steadily for fifteen years. I have *THE RUDDER* bound for eighteen years, and in my library of reference could no more do without it than I could without the dictionary or encyclopedia. Am just in receipt of the May number. The articles on the Cape Cod



Members of the Geelong Y. C., Geelong, Victoria



Home of the Perth Flying Squadron, Perth, West Australia

Canal and the entering of harbors by W. M. Thompson and Warren Sheppard are no amateur work, and I would put this number ahead of any similar magazine for May on the market.

While I admire Mr. Day for many qualities, the one I chiefly admire is his independence and the correct value he places on the worth of this life, when he goes off sailing and knocking about for the Summer, and refuses to open any letters, when he might so commonly think that he could not do it. With best regards to Mr. Day and Mr. Bieling, another breezy spirit, I remain,

LOUIS SAYER.

* * *

LURLINE'S CRUISE

I have been much interested in reading the articles, "In the Tracks of the Trades," by Mr. Lewis R. Freeman, appearing in recent issues of *THE RUDDER*. Mr. Freeman has taken the full allowance of license given to poets and romancers in describing some of the incidents which occurred to us during our voyage among the Islands, but no serious fault can be found with this.

It occurs to me that your readers may receive the impression that our voyage was an unusually stormy one, and that we must have worn out several sets of reef points. Such an impression would be very unjust to the South Pacific weather, for, with the exception of the usual Southeasterly gale incidental to Winter months on the California coast and the moderate gale on the voyage between Samoa and Fiji, we encountered no rough weather. Naturally, in a voyage of 14,000 miles made with a desire for comfort more than for speed, we frequently shortened sail rather than slam unnecessarily into a head sea.

I have sailed both in small and large vessels on the Atlantic as well as the Pacific, and can strongly recommend a voyage among the South Sea Islands to any yachtsman having the time and opportunity to take such a trip. While an auxiliary would frequently be found useful, it is not at all necessary. Yachting visitors will be received and entertained by the natives to the full extent of their ability, and one will find such entertainments interesting and delightful, and leave the Islands with a high opinion of the character of the natives, and a feeling that to obtain happiness in life it is not necessary for us to surround ourselves with the often burdensome adjuncts and refinements of our so-called civilized existence.

H. H. SINCLAIR,
"The Commodore."

PLANKING A CATBOAT

Would you kindly request any of your readers who have had the experience of building a broad, beamy boat, such as a catboat, with narrow planking, hollow and round edge, if in their opinion it is an easier method than the regular way, and if they experienced great difficulty in finishing the sides of boat, owing to the tremendous curve the planks assume toward the last, and what means they took to overcome this difficulty.

The writer intends to build a boat of the above description and would like to use the narrow strips if possible, and any information would be gladly welcomed.

CATBOAT.

* * *

SONDER—WHAT IT MEANS

Mr. Day of THE RUDDER has forwarded to me your letter of May 21st, asking just what is meant by Sonder racing. In reply, will say, that Sonder racing is racing which is done by the Sonderclass under the Sonderclass restrictions. The Sonderclass is a class of small yachts developed in Germany under the patronage of Emperor William and Prince Henry of Prussia. The word "Sonder" means "Special." In other words, the Sonderclass

is a special class, so called because it does not conform to the restrictions of the regular classes provided for by the rules of the International Yacht Racing Union.

Sonderclass racing was introduced in this country by the Eastern Y. C., being the type of boat used in German-American yacht races, arranged by the Kaiserlicher Y. C. in Germany and the Eastern Y. C. in America.

I enclose herewith a copy of the last circular sent out, which includes all the restrictions of the Sonderclass.

HENRY HOWARD,
Secretary.

* * *

ONE IDEA OF PROFESSIONALISM

In reply to your favor of recent date, requesting a definition of a "professional," as used in the conditions of the Albany Race, the Committee has ruled, in addition to the wording in the conditions, as follows:

"One who is engaged in, or within the past five years has been engaged in, the designing of, or manufacture, sale, repair, or operation of, marine engines or boats, as a means of livelihood, shall be considered connected with the trade."

REGATTA COMMITTEE,
New York Motor Boat Club.

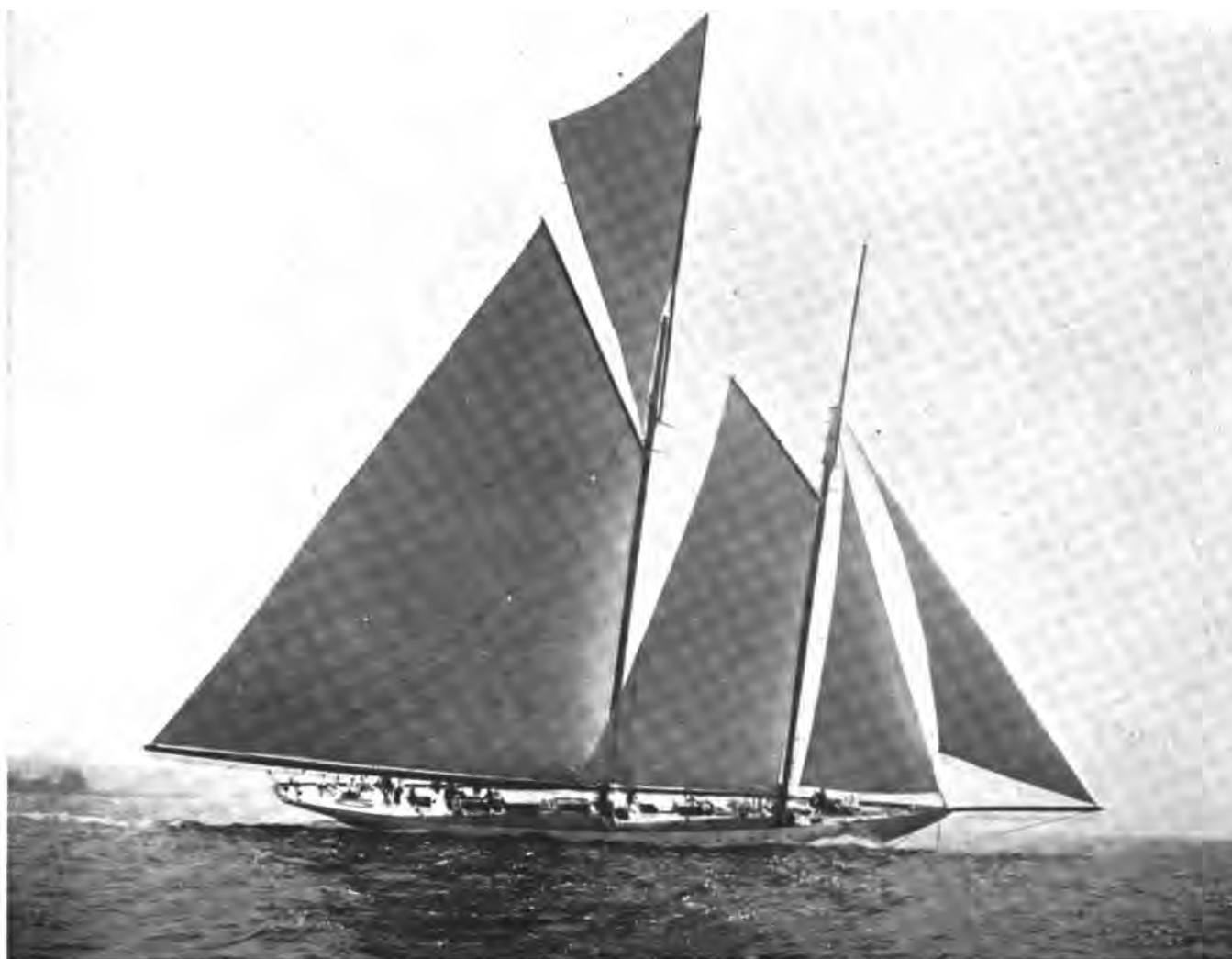


Photo by Levick

Elena, Owned by Morton F. Plant, on Her Trial Trip



HURRAH'S NEST

"A Place for everything and nothing in its place." Letters for insertion under this head are limited to two hundred and fifty words, and must be accompanied by correct name and address of writer. Address the Hurrah's Nest, care Editor THE RUDDER, 1 Hudson St., N. Y., U. S. A.



PACIFIC COAST SCHOONER

I THINK I remember having seen in THE RUDDER, some time ago, a request to subscribers for photographs they might think of interest to you or your readers. I therefore take the liberty of sending you a photograph of the four-masted schooner Lottie Bennett, standing off and on in Seattle Harbor, which strikes me as an unusually good picture of a vessel under sail. She is a good type of the Pacific Coast lumber drogher of the past, now being driven to the wall by the steam-schooner in the coasting trade, and the foreign tramp steamship in the offshore trade, in the latter case with the assistance of the United States Government, which sends numbers of these foreign tramps to this coast with American coal for the use of the Navy, thus demoralizing the charter market with a lot of foreign seeking tonnage.

Bennett is 180 ft. over all; 37 ft. 6 in. breadth of beam, and 13 ft. hold, with a tonnage of 566 gross, and 496 net; is a single-deck vessel, with a carrying capacity of 750 M. lumber—the greater part of which is carried

on deck—and 1,000 tons dead weight under deck. Thirteen feet is a common height for the deck-load, and even higher loads are sometimes carried, evidence of which is seen in the pinrails on the rigging, which are at a height convenient for use when the deck-load is on; and the lumber reefs in the main and mizzen, which are rigged like the bonnet on the jib formerly in use on Eastern fishermen.

When loaded, these vessels are frequently decks to, or with very little freeboard, and the full poop, with narrow quarter-deck at the rail height on the forward side, was adopted to make the ship drier aft, and make life a little more pleasant for the man at the wheel. Most lumber schooners built since Bennett also have a high fore-castle deck, with crew's quarters underneath, for the same reason, and also to allow of a smaller deckhouse, thus giving room for a larger deck-load.

The leg-o'-mutton spanker and ring-tail topsail are not generally in use, but are very commonly seen.

Just forward of the fore rigging may be seen projecting the spinnaker boom. Many schooners carry spinners in varying forms and sizes, according to the skipper's idea. They generally hoist to the trestle-trees. The square foresail, brailing out on a standing yard, is also common.

Bennett was built at Port Blakeley, Wash., in 1899, one of a fleet of 108 built by one firm between 1873 and 1903, in which year they went out of business. The last member of the firm is now dead.

Winslow, Wash.

JAMES W. HALL.



Pacific Coast Schooner

AMERICAN DESIGN ON LAKE GENEVA

THE sloop Ola, shown in the accompanying illustration, was designed by Mr. Henry J. Gielow for Mr. John F. Revilliod, of Vaud, Switzerland, and last year won the championship of Lake Geneva, although she is now in her fifth season of racing, her record during last season being five firsts, two seconds, one third, and one fifth, out of nine starts.

The owner of Ola writes of her as follows:

"Ola was built in 1907, but too late to take part in any regatta. Her first racing season was 1908, when she did not make a good show, her sail area being too small for the light winds on Lake Geneva, although in a good breeze she could lick the other boats. In 1909 she made a better show, her sail area having been increased, but still in light weather she was always beaten, although in good breezes she made one first prize and two seconds.

"In 1910 she had a new sail plan designed by Mr. H. J. Gielow; her bowsprit was shortened, also the boom, and the mast raised about one meter or 3 feet. This



Lake Geneva, Switzerland, *Flyer*, Designed by H. J. Gielow

made of Ola the best boat, sailing well in very light breeze and strong ones. For windward work she is second to none of her class.

"One day over a triangular course she was last at the first two marks, and on the last leg, which was to windward, she not only made up for mistakes and lost time of the other two legs, but on one tack got in first (whereas the other three boats had several tacks to make), 27 seconds ahead of the second boat."

SOUTH AFRICAN CARGO VESSEL

THE accompanying cut shows the auxiliary ketch *William*, which runs as a cargo boat on the Tamar River from George Town to Launceston, South Africa. This boat is 40 feet long, 13 feet breadth, and 5 feet depth of hold. Her capacity is 31 tons, and she makes the run of



South African Cargo Vessel

35 miles in 5½ hours. The engine is a two-cylinder Model C Sterling of 12-h.p.

ALBERTA

WE are inclosing herewith photograph of tug owned by Cotten Bros. Cypress Company, of Morgan City, La., in which was installed a Niagara, 25-h.p., 18 months ago. Mr. H. M. Cotten, president of the company, has the following to say of the outfit:

"This engine has been in constant service for about 18 months, and we are pleased to say it has given us perfect satisfaction in every respect. It never fails to go, and has been running regularly since we installed it in our tug, without repairs of any consequence. We use our tug *Alberta* for pleasure, and also light towing, such as barges and small booms of timber. In this kind of work Niagara has proven very satisfactory."



Alberta, 25-H.P. Niagara Engine, Used as Towboat



A Near-Viper at 16 Miles per Hour

FROM AUSTRALIA

AFTER the walloping we had at Mr. Hickman's hands in a recent issue of *THE RUDDER*, it was a joyous surprise to encounter the following communication from Adelaide, South Australia. There is considerable detail about engine equipment, etc., which we omit from the copy, as it has no bearing on the 12-footer vs. the Viper; and we do not give the name of the writer, because we have no authority to do so, though we are taking a chance on sending the set of pictures we received with the letter. Here is what he has to say:

"I lately I put a 12-h.p. engine into a 20-foot flat-bottom boat after the style of the Viper, and got 16½ miles per hour. Then seeing that you had run rings around Viper with a 12-foot flat boat, I thought I would try the experiment; so I took Viper's engine out and installed it in a 12-foot flat boat, and did 19¾ miles per hour, so this bears out what you say. I am sending you photos of the Viper and also the 12-footer. Now, I am looking for more speed, and want your best quotation on a 60-h.p. engine, for a boat to do about 30 miles per hour. I might be able to send you an order for two 60-h.p. en-



Another View of the Twelve-Footer

gines and one 40-h.p. engine, as my brother is interested in a fast boat, as is a friend of ours. * * *

"In case we order the three engines, I thought of putting mine in the 12-footer; my brother will put his in a Viper, and the third boat has to be built, so am open to any suggestions you may put out as to form of boat or power. The fastest boat here is the Thornycroft Miranda III, which does 30 miles per hour; she is what we are out to try and beat."

Question right here is: If a 12-foot Viper is a hydroplane, what is a 20-foot Viper? For this 12-foot flat boat looks to us like a miniature edition of Mr. Hickman's Viper.

Anyway, we should like to have a lot more critical things said about us. If Mr. Hickman wants a real mean catch-word, he might call the Elbridge output "papier mache" engines; we have heard them so referred to by some folks who believe in carrying more weight.

Yours very truly,

LYMAN SEELY,

Rochester, N. Y.

For Elbridge Engine Co.



Twelve-Footer at 19¾ Miles per Hour



Twelve-Footer at Rest. Her Breadth of Beam is 4 Ft. 3 In



Ethelda, 20-H.P. Gray Engine, an Enlarged Mackerel Design Built from Rudder Plans

ENLARGED MACKEREL

I AM sending you under separate cover two photos of my boat Ethelda, an enlarged Mackerel, built from RUDDER plans. She is 30 feet by 6 feet 6 inches, and is equipped with a 20-h.p. Gray engine, which drives her at a little over 10 miles an hour in all sorts of weather. She is a fine little ship, and the engine is practically troubleless, and the combination has proved highly satisfactory in every way. I feel I ought to thank you for the many useful lessons I have received from your paper. The articles always being reliable and correct in detail afford the highest satisfaction to your readers in distant parts of the world like this, and THE RUDDER authority is never disputed in matters nautical here.

I have also to compliment you on the extension and improvement of the paper itself. Do you remember, many year ago, you lamented the fact that the reproduction of photos was not equal to those of the *Yachtsman*? But you have not now to make such remarks, as I am sure the supplements and reproductions in THE RUDDER can hold their own with anything in the world of literature of the sea. Again thanking you, and wishing you every success with THE RUDDER,

J. S. DUFFIELD.

Townsville, Queensland, Australia.

BUILT FROM RUDDER PLANS

THE accompanying photographs of the power tender are of a 14-footer, built from RUDDER plans, as given in "How to Build a Motor Launch." The boat was built for Mr. B. Ward, Vice-Commodore of the Brussels Yachting Club, in Van Hove's shipyard, at Brussels, Belgium.

The craft is equipped with a 1½-h.p. Leda engine, which drives her at a speed of 4¼ nautical miles per hour, with five persons aboard.

The cost of the outfit complete, built of cedar, and with all fittings, was £38, and the owner states that she is "the finest, most dry and seaworthy dinghy in Belgium."

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BROOKLYN Y. C. OPEN POWER-BOAT RACES

DURING the coming season, the Brooklyn Y. C. will hold power-boat races on Saturday of each week, beginning with June 3d and ending on September 2d.

The races will start from off the clubhouse, between the regatta committee boat and a stakeboat to be anchored about one-half mile N.W. of the westerly end of the club pier.

There will be three classes. The first, for boats between 50 and 70 feet in length. The second, for boats



Power Tender Built from Rudder Plans



Showing Interior of Tender

between 30 and 50 feet in length. The third, for open boats up to 30 feet in length. No speed or semi-speed boats will be allowed in any of the classes.

These races will be open to all boats owned by members of recognized yacht clubs, with the exception of the second Saturday in June, July and August, when the races will be for boats enrolled in the Brooklyn Y. C. only.

Substantial prizes will be awarded in each class where there are two or more starters, with the intention of completing the course, and where five or more start and complete the course, a second prize will be awarded in each class. Prizes will be awarded on the day which the races are sailed and won.

If the regatta committee concludes that a sufficient number of the boats entered in the first two classes have not a fair chance of winning any of the races to be sailed during the season, it will, in all likelihood, organize a handicap class, the committee to use its judgment in so placing the boats in the handicap division as to make the chances of the boats in that class equal. New handicaps will be figured each week.

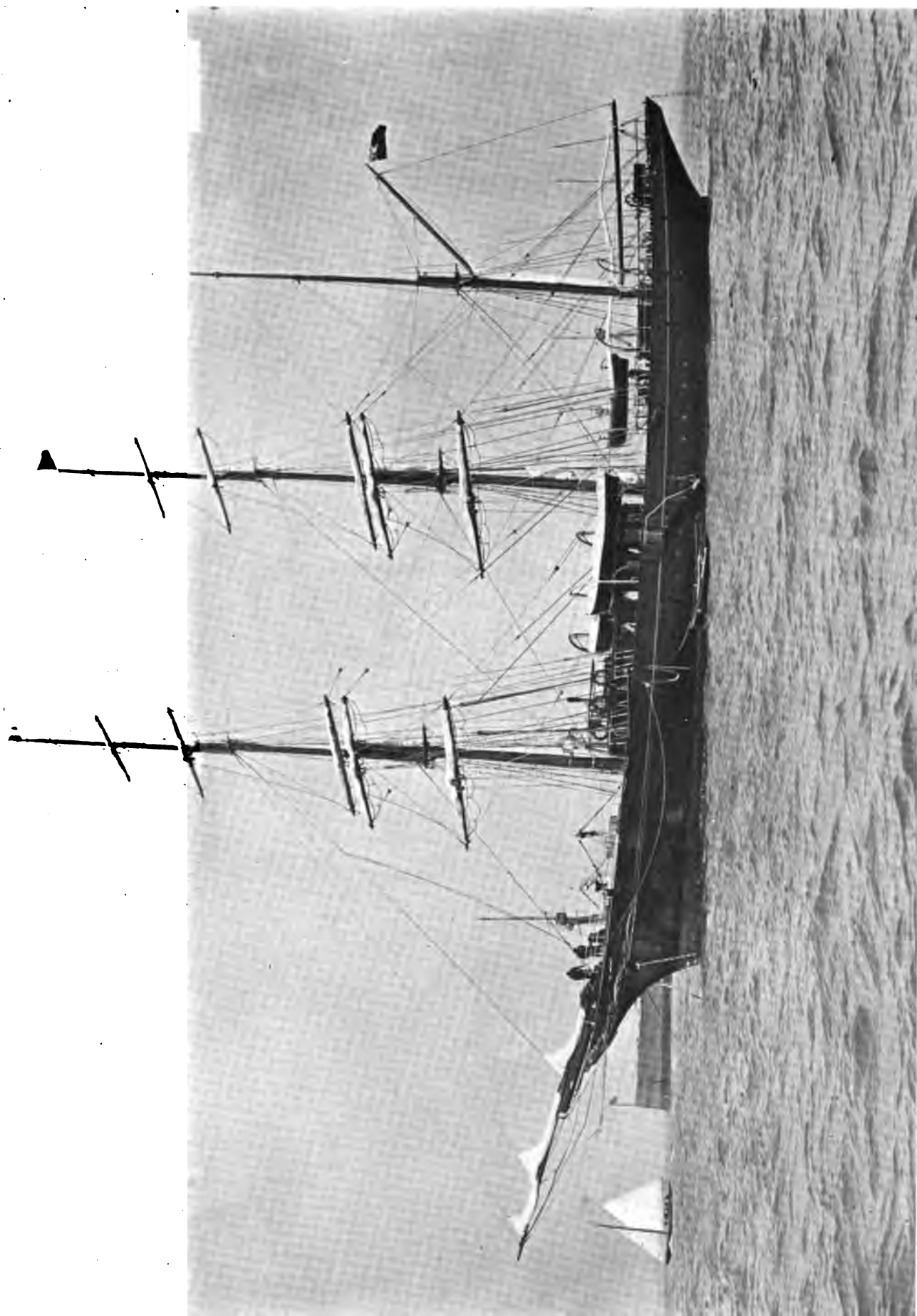
There will be sixteen courses over which the races may be sailed, to be decided upon by the committee. Courses one to ten inclusive, are to be raced by the boats in classes one and two; the handicap class, if one is established, to race over any of the sixteen courses; the open boats to race courses eleven to sixteen, both inclusive.

The races will be under the rules of American Power-Boat Association and the handicaps to be figured as therein contained.

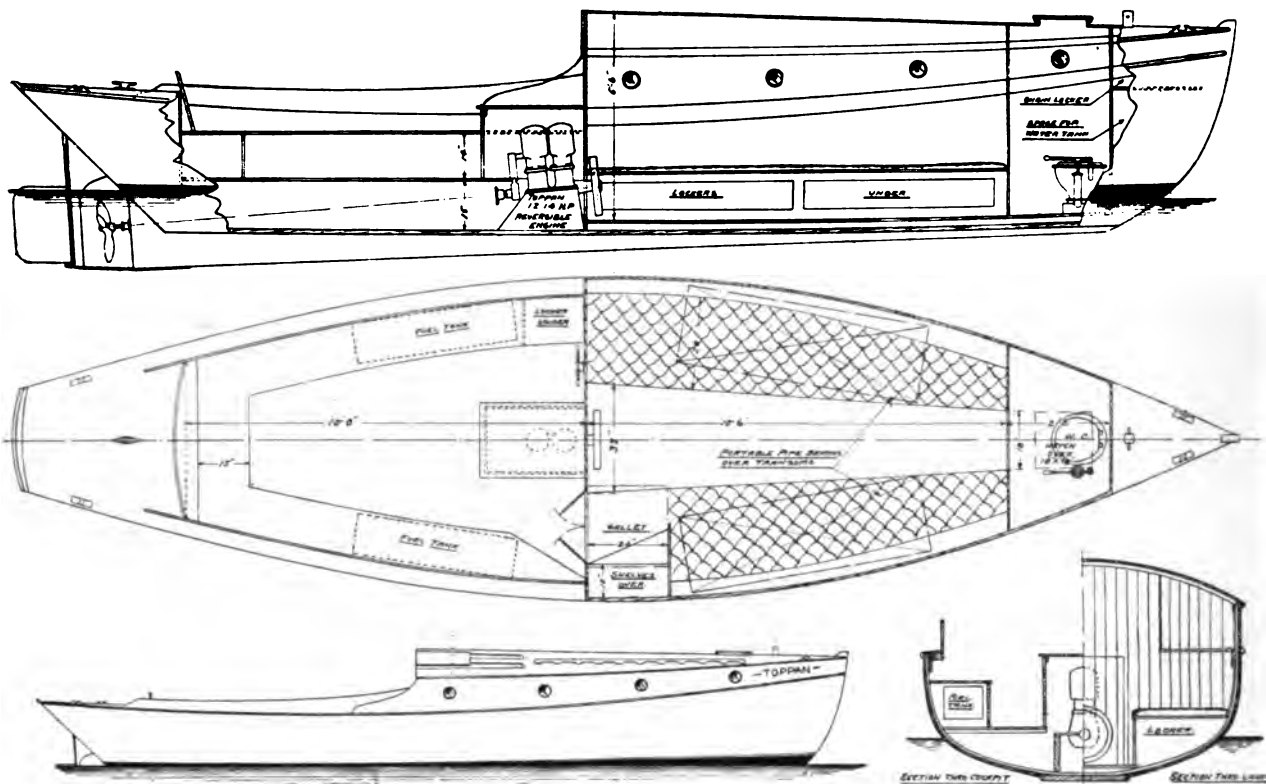
Written entries will be received by the regatta committee at the club, foot of 22d Avenue, Bensonhurst, up to one o'clock on the day of any race. Entry cards will be furnished on request. Each entry must be accompanied by a 1911 rating measurement certificate (where one is not already on file with the regatta committee) from the measurer of a duly recognized yacht club, subject to verification by the measurer of the Brooklyn Y. C., if necessary. A certificate of measurement having once been filed with the committee, the boat to which it applies may start in any subsequent race without notice to the committee.



British Training Brig Martin



Auxillary Barque Modwena Owned by Mrs Edgar Thornton



Thirty-Foot Stock Cruiser, Manufactured by the Toppan Boat Mfg. Co.

THIRTY-FOOT STOCK CRUISER

THE 30-footer shown in the accompanying drawings is a stock model of the Toppan Boat Mfg. Company, of Boston, Mass. The intention in putting this boat before the public was to provide a safe, comfortable raised deck cruiser, capable of standing any ordinary Summer weather liable to be encountered along the Atlantic Coast. The boats are equipped with a two-cylinder jump-spark machine, which the manufacturers claim will drive the boats at a cruising speed of ten miles per hour, and the price of the outfit complete, including cushions, tools, flagpoles, steering gear, military mast and rigging, etc., is \$1,250.

General dimensions are as follows:

Length o. a.	30 feet
Breadth	8 "

• • •

PACIFIC COAST CRUISER

OPPOSITE are shown the outboard profile and cabin accommodation plans of a 56-foot power cruiser, designed by Messrs. Lee & Brinton, of Seattle, for Mr. W. A. Bauer, of Vancouver, B. C. The boat is now under construction at the Vancouver Shipyards, Ltd., and will shortly be completed.

The designers have succeeded in developing what they consider to be an ideal type of boat for cruising in the extensive inland waters of Puget Sound, British Columbia and Alaska. The design has been admired, and received favorable comment from naval architects and other critics who know the requirements of the waters in which the boat is to be used. It is expected that this type of boat will prove very popular. In these waters, where a pilot house on a boat of this size is a desirable,

if not a necessary, feature, the designer is confronted with the problem of how to place a pilot house on a modern cruiser without sacrificing beauty of outboard appearance and convenience of arrangement. In the design here presented there is an excellent solution of the problem, by adopting a modification of the raised deck type of cruiser, described as follows:

The forward deck is dropped 15 inches below the line of the raised deck amidships, thus allowing drop sash to be used in the pilot house, without making the latter stand as high as would be required with the usual raised deck type. It also allows more of a sheer forward, and consequently giving the boat a more graceful appearance than the usual flat sheer. The freeboard at the stem is 6 feet 3 inches, and allows good headroom in the fore-castle and engine room, which are located under the forward deck. The raised deck amidships gives 6 feet 3 inches clear headroom in the cabin, the floor of which is high enough to allow the fresh-water tanks to be placed under same each side of the shaft. Aft of the raised deck there is a flush after deck, with trunk cabin house in way of the after accommodations.

The interior accommodations are laid out in accordance with the requirements of the owner, to be similar to the cabin plan of the well-known cruiser Soya, designed by the same firm. The after cabin is entered from the deck through a companionway. There are three transom berths in this cabin, one each side and one at the after end athwartships under the deck. At the forward end on the starboard side there is a large full height clothes locker and entrance to the toilet room opposite, on the port side. Under the deck on each side back of the berths are alcoves and lockers, and also lockers under the berths. Plenty of light and ventilation will be supplied through sliding sash in the cabin trunk. This cabin will be finished in white enamel.

The toilet room is to be equipped with the usual yacht plumbing, of best quality, and there are shelves and linen locker.

From the after cabin a sliding door leads to the main cabin, which is used as the dining saloon. There are two wide transom seats each side, with backs to swing up each side to form upper berths, if extra accommodations are required. There is a clothes locker, lockers under the seats, buffet and cabinet with glass front at the forward end, and a folding table. Light and ventilation is supplied through three 8-inch hinged portlights each side and a skylight overhead. The interior finish of this cabin will be in mahogany.

The galley is located on the port side forward of the main cabin, and is entered from the latter as well as from the pilot house. The dimensions of the galley are 6 feet square. Space is provided for a coal stove to be used in cold weather, and the smoke pipe leading up through the after end of the pilot house will tend to keep the latter warm. In the Summer months an oil-stove will be used. The ice-box is located under the pilot house, and access is gained by hinging up the steps leading to the pilot house. There are the usual racks for dishes, lockers, sink, pump, dresser, etc., all conveniently arranged. There are three hinged portlights and a skylight overhead, to supply light and ventilation.

There is an extra toilet room on the starboard side, entered from the galley, and equipped with the usual yacht plumbing, and a linen locker.

The pilot house is entered from the main deck through a companionway at the after end on the starboard side. On the port side is a door and stairs leading

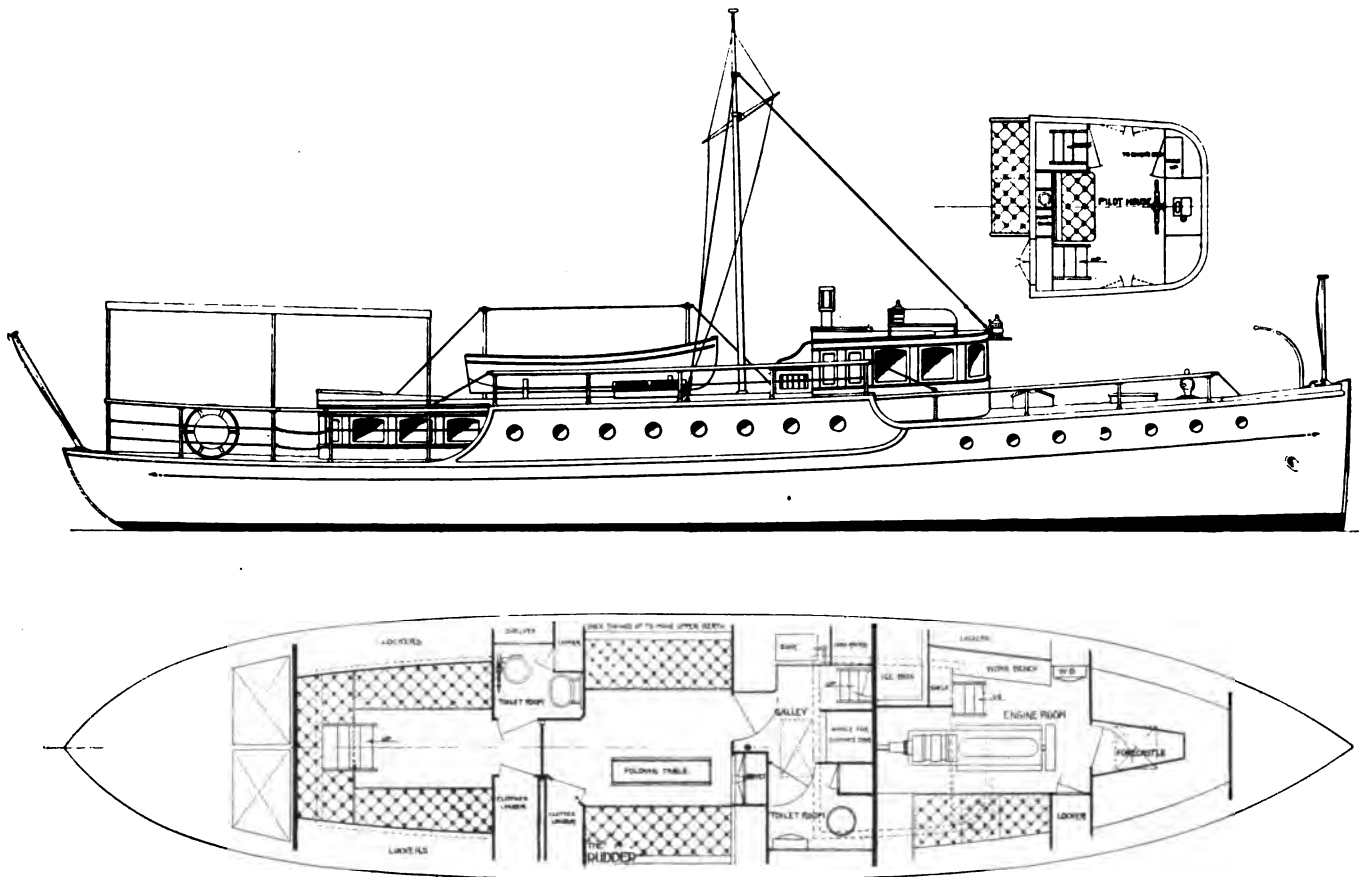
aft and down to the galley. In the center there is a cushioned seat, and above this lockers and chart racks with front to hinge down, forming chart table. At the forward end on the port side there are steps leading down to the engine room.

The engine room is provided with seat, clothes locker, work bench with vise, lockers for tools, etc., wash basin and w. c., located under the seat. There are three hinged portlights each side and a skylight. The engine is to be a 30-h.p. Twentieth Century, which is expected to give the boat a cruising speed of 10½ miles. The engine is to be operated from the pilot house with levers connecting to the reverse clutch and speed control. Electric lighting will be furnished with a dynamo operating off the engine and storage batteries located under the pilot house on starboard side. A searchlight will be placed on top of the pilot house.

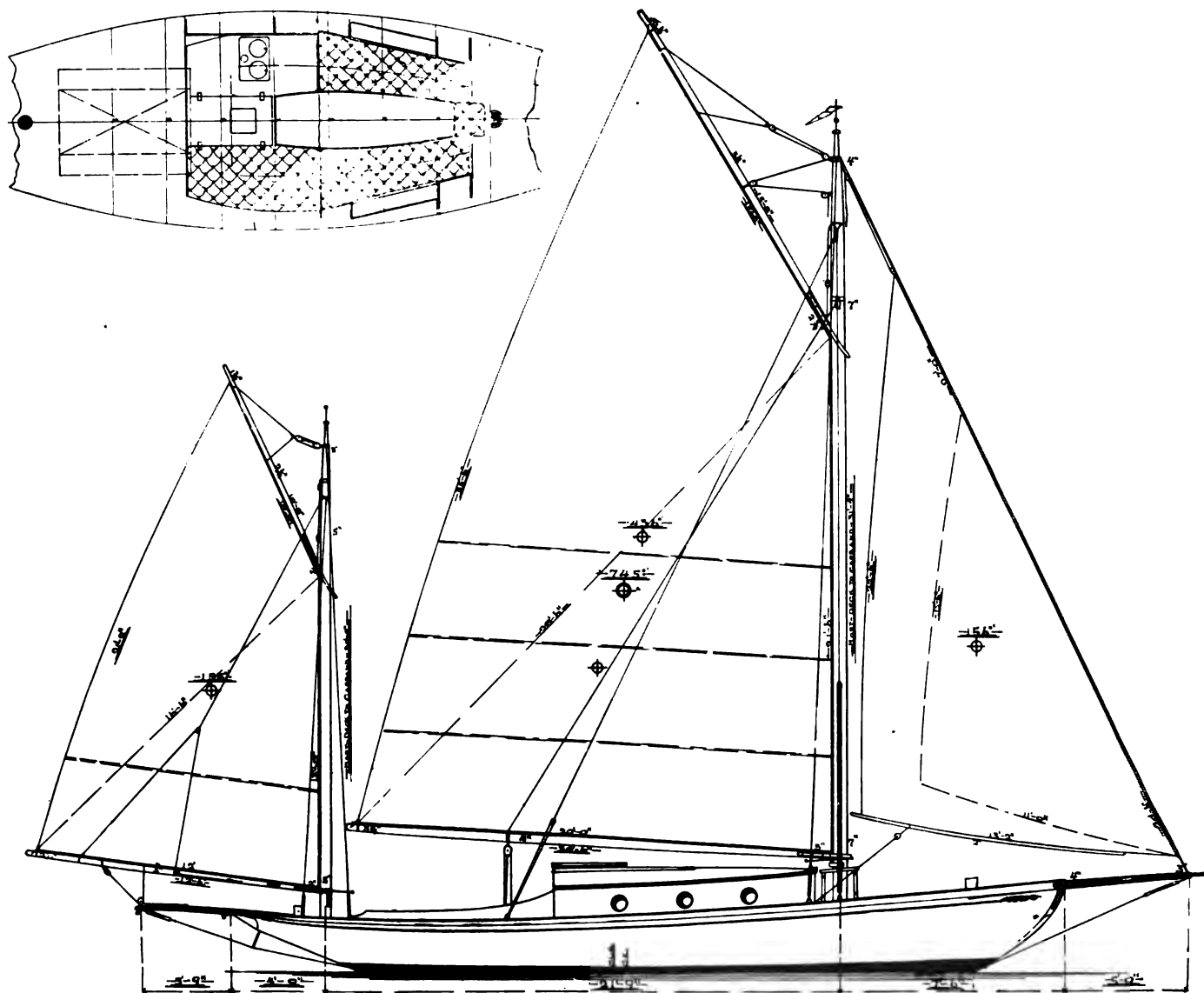
The forecabin has two berths with lockers under, and is entered from the engine room, and also from the deck through an emergency hatch.

The construction of the boat is to be substantial, with steam-bent oak frames, sided 1¾ inch, and planking of Puget Sound fir, 1¾ inch thick. The pilot house, trunk cabin, skylights, and all outside woodwork, are to be of teak, and also the topsides above the guard in way of the raised deck. This will tend to cut down any high-sided appearance.

There will be one military mast with arm, and the mast will extend through the deck and down to the floor in the galley, making it more substantial than if stepped on the deck. One 11-foot dinghy will be carried on the upper deck.



Fifty-Six-Foot Pacific Coast Cruiser. Designed and Built by Lee & Brinton, of Seattle Wash.



Yan, Thirty-Five-Foot Auxiliary Yawl. Designed by C. D. Callahan, of Los Angeles Harbor, Calif.

Fuel tanks are located under the after deck behind double bulkheads. The capacity is 450 gallons. Aft of the engine room is a double water-tight bulkhead separating this compartment from the rest of the boat.

Sleeping accommodations can be provided for 10 people, if required. The interior arrangement is such that the two cabins can be separated by the sliding door between them, and each has a separate toilet room. This arrangement should prove convenient when cruising, and there are ladies in the party. The designers have drawn up an arrangement for a similar boat with entrance to the after accommodations through a companionway on the starboard side entering into a lobby, with hanging space for wet clothes, a toilet room opposite, a stateroom aft, and main cabin forward. This arrangement works out very well, and enables two masts to be conveniently placed on the boat.

The general dimensions are:

Length o. a.	56 feet 0 inches
Breadth	11 " 6 "
Draught	3 " 6 "

YAN

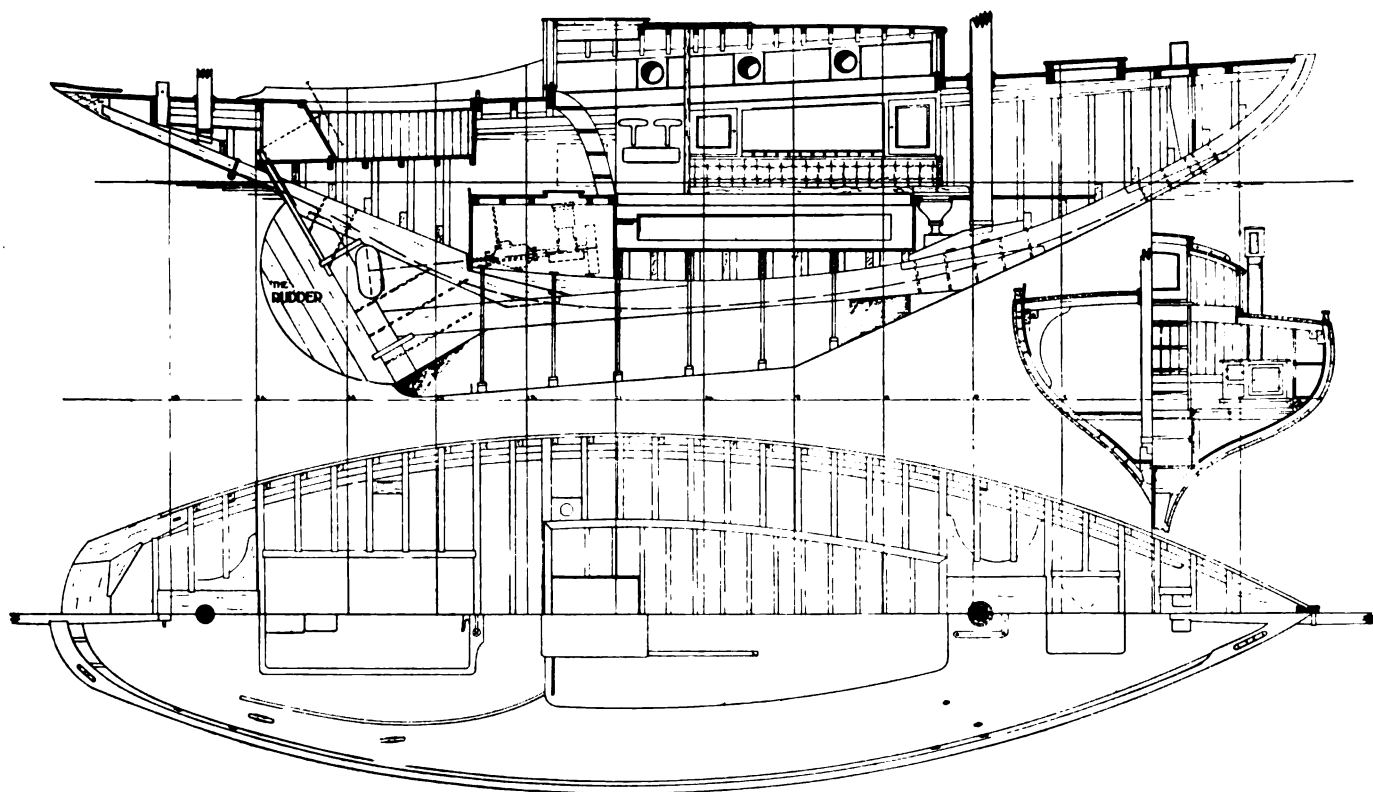
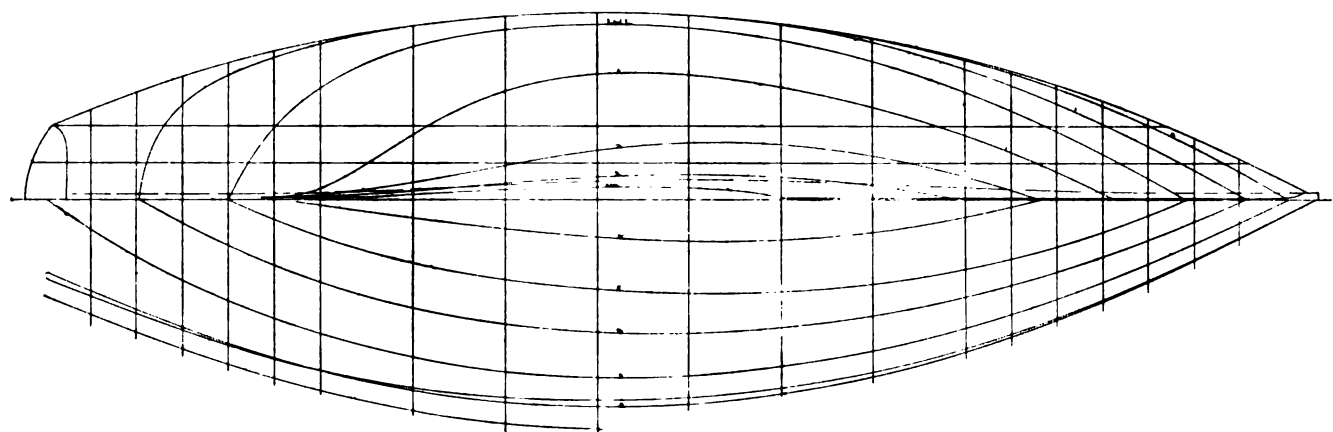
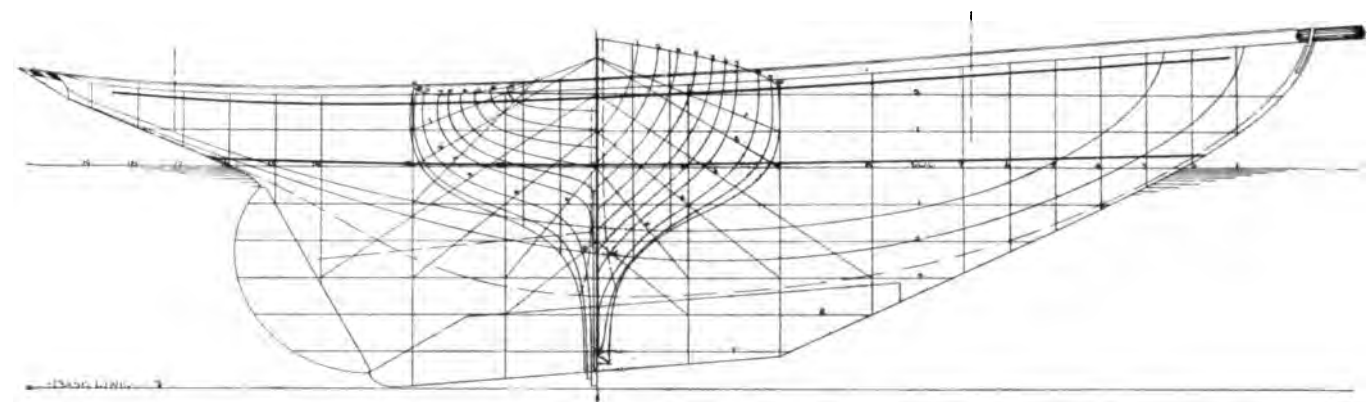
THE auxiliary cruiser Yan, shown in the accompanying plans, was designed by Mr. C. D. Callahan of Los Angeles Harbor, Cal., for Mr. W. H. Bailey, Jr., of Los Angeles, who desired an unusually able craft of heavy scantlings for use in cruising along the Western coast between Los Angeles and Puget Sound. The plans provide for a single-cylinder Bridgeport engine, of 4-h.p., but the designer states that a larger engine of the same make will probably be installed later.

The type of hull is one that Mr. Callahan has found very suitable for offshore work on the Pacific Coast, and one that has proven very fast for the dimensions.

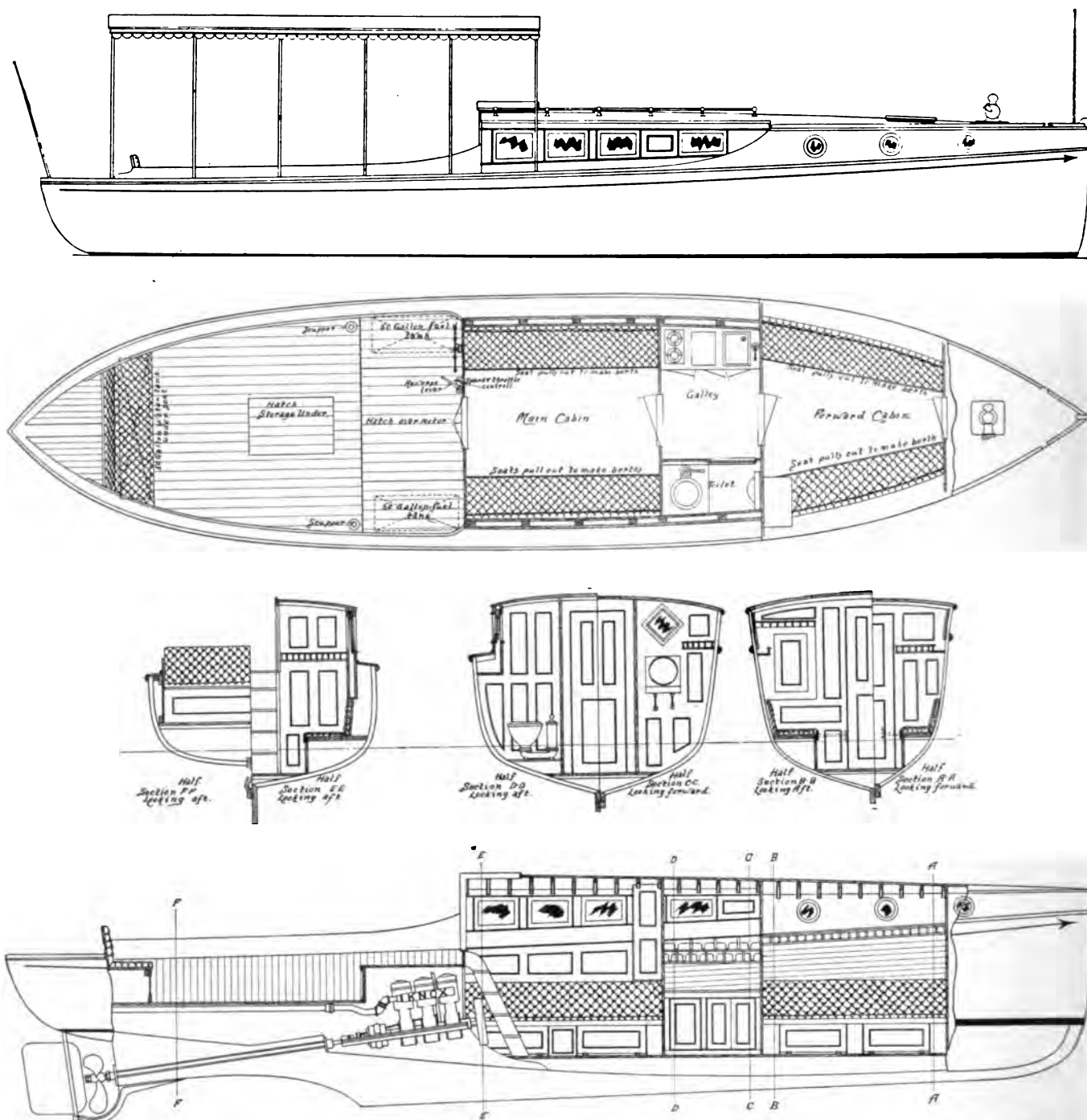
She will be very strongly built and rigged for hard work, and should prove an able, comfortable boat.

The dimensions are as follows:

Length o. a.	35 feet 4 inches
Length w. l.	26 " 0 "
Breadth	10 " 0 "
Draught	6 " 0 "



Lines and Construction Plans of Thirty-Five-Foot Auxiliary Yawl



Thirty-Eight-Foot Cruiser. Designed and Built by The Camden Anchor-Rockland Machine Co., Camden, Me.

THIRTY-EIGHT-FOOT CRUISER

THE 38-footer shown in the above drawing was designed and built by The Camden Anchor-Rockland Machine Company, of Camden, Me., for Mr. N. A. Cushman, of Portland, Me. The craft is not yet completed, but the boat shown in the accompanying illustration was built from the same lines for Mr. M. Greenwood, of Savannah, Ga. The boat shown in the drawings is equipped with a 22-h.p., three-cylinder Knox engine, which is expected to give her a cruising speed of 10 miles per hour. As will be seen in the plans, the accommodation is generous, and the builders state that they have

turned out three boats from the same design. The prices range in the neighborhood of \$3,000 for the complete boat.

The frame is of oak with pine planking. The boats are copper fastened throughout, and the contract calls for a complete boat, including all furnishings and fittings, together with a 10-foot tender in davits.

The general dimensions are as follows:

Length o. a.	38 feet 0 inches
Breadth	9 " 0 "
Freeboard, forward	5 " 0 "
Freeboard, aft	3 " 0 "
Headroom	6 " 2 "



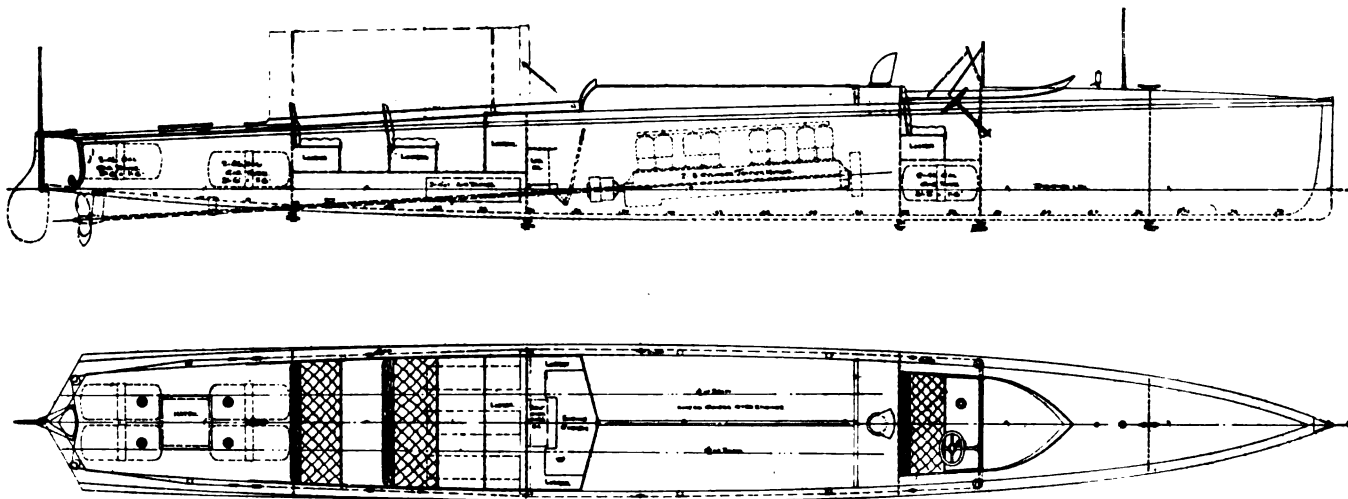
Natalie III, 15-H.P. Knox Engine, Built from Same Design as Shown on Previous Page

HIGH-SPEED DAY-BOAT

THERE is now building at the George Lawley & Son Corporation's yard, Neponset, Mass., from Messrs. Tams, Lemoine & Crane's designs, and under their supervision, a 55-foot, high-speed power launch, a drawing of which is shown above. There is a growing demand for large high-speed boats of this type for day service, and this one is a development of one of this firm's popular models. Her construction will be of the best throughout, and, while in no sense heavy, is most substantial. Her general dimensions are 55 feet over all, 6 feet 10 inches breadth, and 4 feet 3 inches depth. Her keel will be of yellow pine, in one length, stem of oak, crooked in one piece, frames of elm, steam-bent, in one piece from keel

to deck. Planking of mahogany, copper-fastened. Deck will be of mahogany. The engine foundations are extra heavy, and are of elm. She will have a turtle deck forward, with a water-tight bulkhead in bow. There will be three cockpits, with mahogany coamings about each.

In the after, or owner's, cockpit there will be two athwartship seats, with lockers underneath. There will be a storm hood over this cockpit fitted with a mahogany wind shield, with glass windows, which will furnish ample protection for the owner in stormy weather. Forward of this is the engineer's cockpit, with seat and lockers on each side; then comes engine space. Directly forward of this is the steersman's cockpit, which also has an athwartship seat, with locker underneath. This cock-



Fifty-Foot High-Speed Day-Boat, Designed by Tams, Lemoine & Crane

pit is fitted with a hinged wind shield. She will have five water-tight bulkheads. The launch is to have two wheels, being steered from a wheel in the owner's cockpit and one in the steersman's cockpit, on the starboard side.

Her motive power will consist of two 200-h.p., eight-cylinder Jencick engines, with reversing gear, air tank, etc. These engines Messrs. Tams, Lemoine & Crane have used in several high-speed power boats of their own design, and have found them to be excellent for this type of boat. Her gasolene tanks are to be of seamless tinned steel, with a capacity of 270 gallons. They will be six in number, four in the after part of the launch and two under forward cockpit. Her gasolene supply pipes will be of copper. Practically all metal work on deck will be of brass. She will have a speed of 35 miles an hour. Her propellers are being especially designed by Mr. Crane. The shafting will be of Tobin bronze. She will have a Monel plate rudder.

This boat is being built for a prominent New York yachtsman, who now owns a fast launch, which was built a few years ago from Messrs. Tams, Lemoine & Crane's design.

The launch will be used principally at Islesboro, Me., and as there are several other fast boats of this type at Islesboro there should be some good racing in those waters next Summer.

MESSENGER

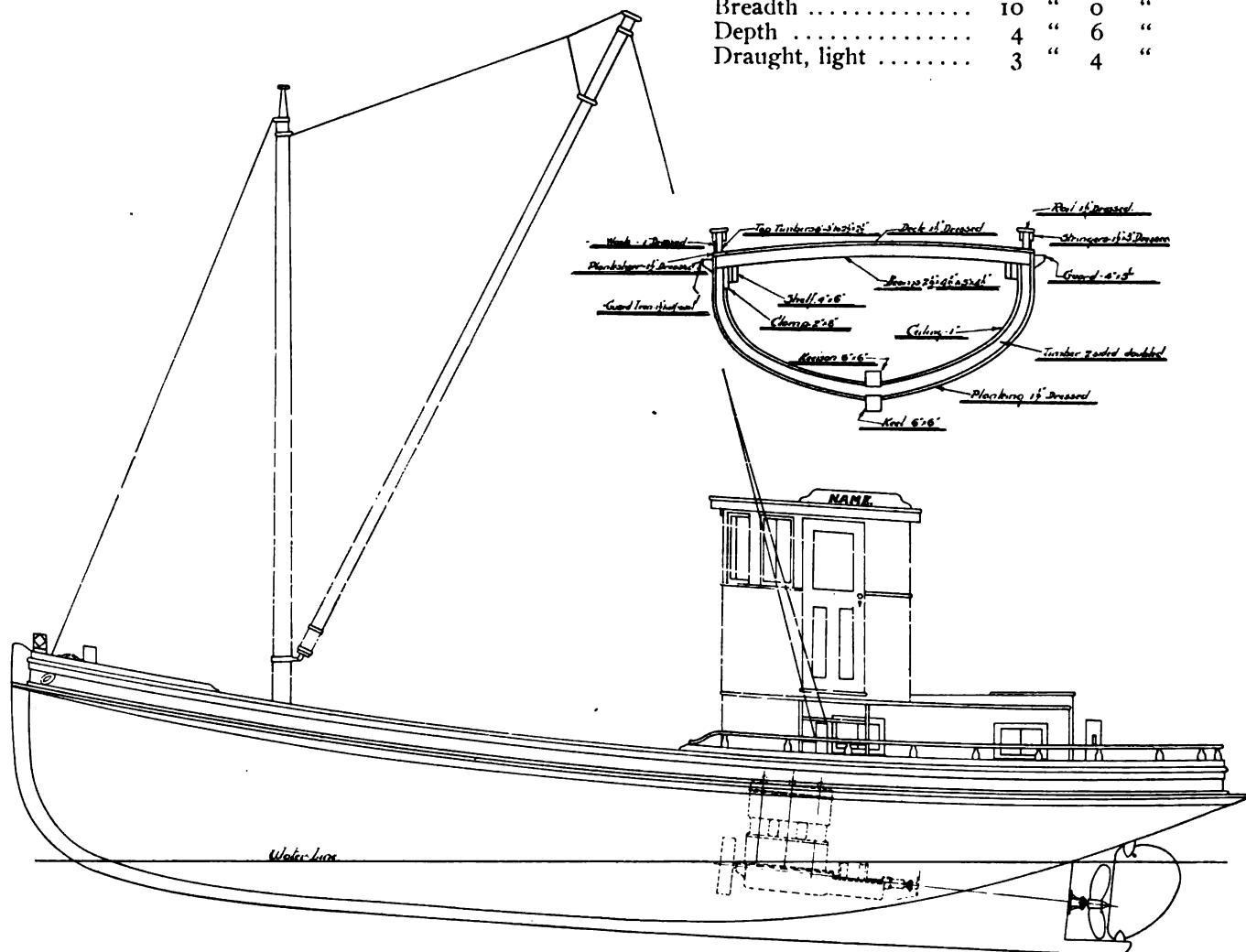
MESSENGER was designed and built by the Lake Torpedo Boat Company, of Bridgeport, Conn., for F. L. Johanns & Co. of New York City, which firm makes a specialty of delivering provisions to ships in and about New York harbor.

The boat was constructed especially strong and heavy to stand rough usage, and up to the present has given every satisfaction. With the exception of the gasolene tanks, which are located on the deck on each side directly forward of the cabin, the hold is entirely clear for cargo. The cabin is arranged with a berth and locker at each side, and with necessary plumbing and cooking facilities.

The pilothouse has five balanced windows, with binnacle, steering wheel and engine controls in the forward end, with doors on either side leading to the deck. The keel stem, stern post, and all trim, is of white oak, the frame being of oak and chestnut doubled, sawed from natural crook timber. Planking, ceiling, clamps, deck, etc., are of yellow pine. The main fastenings are of copper, with the planking galvanized, iron-nailed.

The motive power consists of an 18-25-h.p. Standard engine, which was guaranteed to give the boat a speed of nine miles per hour. The craft has a capacity of 10 tons, and her general dimensions are as follows:

Length o. a.	38	feet	0	inches
Breadth	10	"	0	"
Depth	4	"	6	"
Draught, light	3	"	4	"



Messenger a Thirty-Eight-Foot Freight Boat with 18-25-H.P. Standard Engine

II

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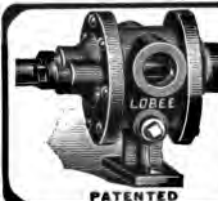
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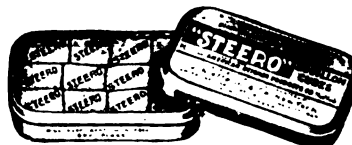
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Guaranteed to stand under the most trying circumstances, as on yachts, boats and vessels of any kind for either inside or outside work, also front doors, store fronts, wagons, etc.

**CHINA GLOSS WHITE YACHT BLACK
DECK PAINT SMOKESTACK PAINT
YACHT WHITE ENGINE PAINT**

C. A. WOOLSEY PAINT AND COLOR COMPANY


Jersey City, New Jersey, U. S. A.

Edward Smith & Co.'s Spar Coating

will not turn white, or chip—it preserves the wood, lasts longest and always looks well. There is 84 years' experience in every can. Remember it costs a little more—those who know pay it gladly because they get the best spar coating money can buy. Use Smith's and your boat will be properly varnished.

Varnish Makers for 84 Years

**EDWARD SMITH & CO., Mail Address, P. O. Box 1780, N. Y. City.
3532-34 S. Morgan St., Chicago**



Electric Metal Polish


**CLEAN, QUICK, LASTING,
NO DIRT, NO GREASE**

SAMPLE UPON APPLICATION

Manufactured by

Factory, Arlington, N. J. J. WESLEY EDMONDS & SON, Office, 214-A Franklin St., N. Y. City

Used by Engineers, Sailors and Yachtsmen, and all desiring a first-class polish.



For sale by Grocers, Yacht Supply, Hardware, Harness Dealers and all First-class Stores



Which boat will go the faster?

Bridgeport Standard (MITCHELL'S) Non-Fouling Enamel Paint

has been painted with **Bridgeport Standard (Mitchell's) Non-Fouling Enamel Paint**. You will note that there are no barnacles or seaweed on it; that it goes through the water smoothly, with nothing to retard its progress.

was painted with some inferior paint, which seems to act like a magnet for all the seaweed and impurities that abound in the water. No matter how much power your boat has, with such obstructions clinging to its bottom, it can't cut through the water and make the time it should.

has been put on the bottom of the speediest boats in American and European waters

The bottoms of three American boats, Harpoon, Beaver and Cima, winners of the Spanish-American Sonder Class races, were painted with it. The Interstate race of the "P" class boats between Massachusetts and New York, was won by Massachusetts boats, Amoret, Mavourneen and Timandra, all users of the Bridgeport Standard (Mitchell's) Non-Fouling Enamel Paint.

The winner of the Manhasset Cup for "P" Class, Cara Mia, had its bottom painted with this paint.

Grayjacket, the fastest of the Q Class, also winner of the Championship of Gravesend Bay, was painted with Bridgeport Standard (Mitchell's) Non-Fouling Enamel Paint.

Rowdy, of the New York Yacht Club 30-foot Class, made the fastest time over the Block Island Course, greatly assisted in doing the trick by being painted with Bridgeport Standard (Mitchell's) Non-Fouling Enamel Paint.

Many testimonials are at your command from yachtsmen the world over—men with international reputations, all of whom are ready to vouch for the superiority of Bridgeport Standard (Mitchell's) Non-Fouling Enamel Paint.

By giving some thought now to the painting of your boat, when Spring comes you can have the work done without delay, and be sure of a surface on the bottom of the boat that will produce results. We can help to increase the speed of your boat very materially at a very small cost to you. We will be pleased to give you further facts if you will write us.

THE BRIDGEPORT WOOD FINISHING COMPANY
NEW MILFORD, CONN.
 NEW YORK CHICAGO BOSTON

JEFFERY'S MARINE GLUE
 No. 7, BLACK, WHITE OR YELLOW GLUE. SOFT QUALITY.
 FOR WATERPROOFING CANVAS, &c.

Its peculiar properties are those of flexibility and durability, and although it becomes soft and pliant under heat, it still retains its adhesion to timber fiber, etc., and is clean and insoluble in water.

For waterproofing the Air-tight compartments and Cases of Life Boats, also for waterproofing Canvas for Tops of Cabins and Railway Cars; and in combination with calico for the waterproof skins of diagonally built Life Boats, Tenders and Motor Boats; for rendering airtight Refrigerating Chambers for Cold Storage; and for attaching Rubber, Glass, Linoleum, Cork and Canvas, to Wood, Iron, Lead, Sheet Zinc and other substances. Used largely by Manufacturers of Knock Down Boats. Also used in combination with Canvas for Decks and Canvas Boats and Canoes, and in Combination with Calico for Sponsons.

No canoeist should be without a can of this Glue; it is invaluable for quick repairs on either canvas or cedar canoes. One pound will waterproof three square feet of canvas.

Send for directions for use.
L. W. FERDINAND & CO., 201 South Street, Boston, Mass., U. S. A.
 Importers and Sole Agents for the United States and Canada.
 For Sale by all Yacht, Boat and Canoe Supply Houses, and Sporting Goods Dealers
 Price Lists and Samples Sent on Application.

THE PAINT you have used so long, always reliable when properly applied.
 27 years the leader.



Tarr & Wonson's Copper Paint,

for wooden Vessels' bottoms, prevents boring of worms, and all marine growth.

Racing Compound, for wooden yachts' bottoms, bright and smooth.

Priming coat **A. Laczone,** Finishing coat **B,**

for bottoms of IRON and STEEL Vessels of every description, to prevent corrosion and all Marine growth.
THE GREAT SPEED INCREASER.

THEY EXCEL ON EVERY POINT

For sale everywhere

8 Highest Medals

Manufactured only by **TARR & WONSON, Limited,**

Gold, Silver & Bronze. Beware of Imitations. **GLOUCESTER, Mass., U. S. A.**

"New Jersey" Copper Paint
 THE BEST AND MOST USED (SPECIAL RED)
Yacht Copper and Green Copper for Yachts
 YACHT WHITE AND YACHT BLACK
 MANUFACTURED BY
HARRY LOUDERBOUGH
 PROPRIETOR
NEW JERSEY PAINT WORKS
 JERSEY CITY, NEW JERSEY, U. S. A.



A Copper Paint that Protects

STEBBINS' COAST PILOT, By Mail, \$1.25

THE RUDDER PUBLISHING CO., 1 Hudson Street, N. Y.

What is the Distance from Lloyds Neck to Larchmont?

Find the answer in the **POCKET COURSE BOOK.**
 Price Twenty-five Cents.

THE RUDDER PUBLISHING COMPANY
 1 Hudson Street, New York

Koukokusha ni otegami onsashidashi no saiwa dozo RUDDER nite goran no mune onkakisoe negaimasu

VALENTINE'S VALSPAR

"The Varnish That Won't Turn White"

VALENTINE & COMPANY

New York Chicago Boston Toronto London Paris

W. P. FULLER & CO., San Francisco
Sole Agents for Pacific Slope and Hawaiian Islands

Valspar Bronze Bottom Paint

Prepared ready for use. Will not harden or turn green in the can. Works easily and dries ready for second coat in three hours. Will keep the bottom clean an entire season. Can be polished for racing finish.

Trade **VALENTINE'S VARNISHES** Mark

ELEPHANT BRAND

"Phosphor-Bronze."

WIRE ROPES

for **STANDING RIGGING,**
TILLER ROPES, Etc.

**RICH
BRONZE
COLOR**

**VERY
STRONG
AND
RIGID**

REQUIRE NO ARTIFICIAL COATING. DO NOT SOIL HANDS NOR SAILS. TESTED BY TWENTY YEARS SERVICE ON SALT WATER.

TRADE MARK

WALKER'S MARINE COPPER PAINT

FOR WOODEN BOTTOMS

GIVES A FINISH SMOOTH AS GLASS ABSOLUTELY ANTI-FOULING

ONE PAINTING LASTS AN ENTIRE SEASON

Manufactured only by **WALKER CHEMICAL WORKS, 52 Broadway, New York**

Dirigo Oil Compasses

when properly installed eliminate uncertainty. All materials permanent in character. No rubber packing to deteriorate.

NAVY DEGREE CIRCLE on dial
Send for catalog and ask about the *Dirigo Electric Compass Light*

E. M. SHERMAN, Manufacturer
20 Reed St., Lexington, Mass.

Trade **DIRIGO** Mark

Don't neglect your motor for want of lubrication; use

DIXON'S GRAPHITE LUBRICANTS

Write for free descriptive booklet

JOSEPH DIXON CRUCIBLE COMPANY Jersey City, N. J.

TRADE MARK

**PAINT THE BOTTOM OF
A DEEP-SEA CRUISING YACHT OR A FAST RACING LAUNCH WITH**

→ S. & M. ←

Marblehead Anti-Fouling Green or White

Smooth Slippery Durable Handsome

It is the most powerful preventive of marine growth, barnacles and borers produced. Keeps the bottom of a cruising yacht absolutely clean, and is superior to pot lead for a racing finish.

The American yacht Cima was refinished with this composition for the Spanish races. Trivia, Chicadee, Cone, Constellation, Rory, Gloriana, Zipaling, Zinganee, Adventure, Umbrina, Shiyessa (Bermuda Race), Idaho (Bermuda Race), Dervish (winner Bermuda Race), and a thousand others all used it.

FOR WOOD OR STEEL. It is NOT A COPPER PAINT and IS NON-CORROSIVE

STEARN'S-McKAY MFG. CO.
MARBLEHEAD, MASS., U. S. A.

FOR TROPICAL WATERS it is the only substitute for Copper Sheathing as a protection against Tereidos



MERIDEN

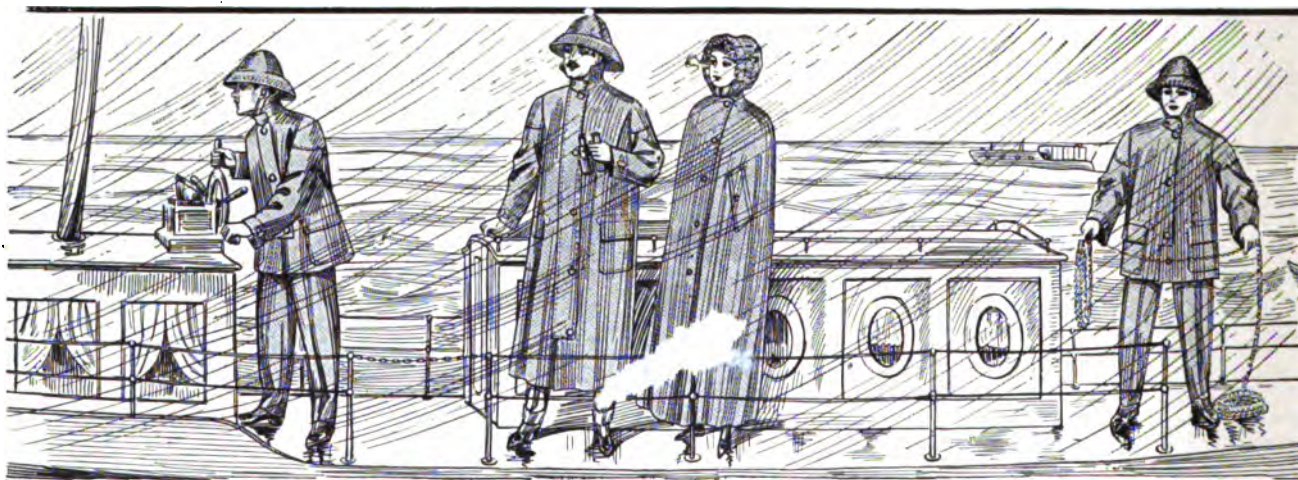
Cups and Trophies

WHETHER it be a cup or trophy to be raced for at the regatta of the big club, or a suitable prize to the winners of the weekly race given by the smaller club, Meriden Cups and Trophies are most appropriate. In every sense of the word they reflect the true spirit of the race and the generosity of the donor. Our variety of designs, from the most elaborate especially designed sterling cups to the more modest ones in silver plate, copper and pewter, is most varied and complete.

Send for illustrated catalogue

THE MERIDEN COMPANY, Silversmiths
(International Silver Co., Successor)

49-51 West 34th Street
and 68-70 West 35th Street,
NEW YORK

“One Dry Man Is Worth Three Wet Ones”

In the lightest showers or the heaviest storms IMPERVO is always waterproof, always comfortable, always sanitary, always light. When you go yachting or motor-boating prepare for bad weather by having a supply of IMPERVO clothing on board for the convenience of your guests and crew.

But be sure and get IMPERVO—the **only real waterproof clothing**.

Don't be satisfied with oilskins, cravenettes or rubber clothing. They are either too heavy, not sufficiently waterproof, or require too much attention to keep them “nearly” waterproof.

IMPERVO retains its qualities for a long time without being touched. No need to spend time oiling it every time you want to wear it; furthermore it is never sticky, greasy, gummy or heavy—like the ordinary waterproof (?)

clothing. IMPERVO is rubberless and can be cleaned with soap and water. It is absolutely water, grease and acid-proof, and never requires oiling.

IMPERVO is the only goods not affected by hot weather; it has been used for years by Army officers throughout the tropics. The U. S. Army Infantry board endorsed it as the best ever for ponchos, shelter tents, etc.

IMPERVO clothing consists of Men's Jacket Sailor Suits, Long Coats, Auto and Hunting Coats, Army Capes, Overalls, Hats, etc., Ladies' Long Capes, Coats and Skirts, all in the Army Olive Drab or Black colors. It is also sold by the yard for Awnings, Boat Covers, Decks, etc.

If your dealer cannot supply you write direct for catalog Y-2, samples and prices to

E. A. Armstrong, 208 W. Kinzie St., Chicago

NEW YORK CITY: Warnock & Co., 19-21 W. 31st Street—The Howard Place Co., 162 South Street. **PHILADELPHIA:** Jacob Reeds' Sons, Agents: 1424 Chestnut Street—F. Vanderherchen's Sons, 7 N. Water Street—E. A. Edwards, Naval Architect, 14 S. 18th Street. **BOSTON:** A. S. Morss & Co., 220 Commercial Street. **PROVIDENCE, R. I.:** Walter Coleman & Sons, 300-312 S. Water Street. **WASHINGTON, D. C.:** S. N. Meyer, 1231 Pennsylvania Ave.



1911 EAGLE ENGINES

More Profits and How to Get Them

IN these days of superlative description and inflated values we appreciate the difficulty we experienced for some years in convincing the Trade that the profit in selling engines was not by selling a cheap engine, but one that brought them a satisfied customer. Cheap engines have had their day. The public has become wise. There are, however, a few people in the world who attempt to get something for nothing. They always fail, always have and always will. You must appreciate that it is impossible to secure a good engine, one that will give you satisfactory service, without paying a fair and reasonable price for it—a price that will recompense the manufacturer for his material and efforts, and a sufficient compensation for the dealer for his service.

If there ever was an opportune time to purchase an engine with a good reputation, now is that time. Eagle engines for 1911 are so good, the prices are so low (considering their quality) that you cannot lose a sale if you can show one to a prospective buyer. Further, the line is so complete with such a variety of sizes that no one is obliged to select an engine that might or might not exactly meet his requirements. You will find in our line an engine that will be suitable in every way, and in every type of boat from 12 to 50 feet in length.

We have had considerable to say relative to our extensive variety of models. We not only meet the requirements of the present type of pleasure craft and speed boats, but we also have a most complete line of heavy-duty engines for working boats. There is no other manufacturer of two-cycle engines who offer such an extensive line as we do in both the semi-speed and heavy-duty model. The fact that a line so complete can be purchased from one manufacturer tends to concentrate your business, insures you of better service, increases your volume, and eventually makes your business more satisfactory and acceptable.

It has always been our policy to offer more for the money invested than it is possible to get anywhere at the same price. We do this,

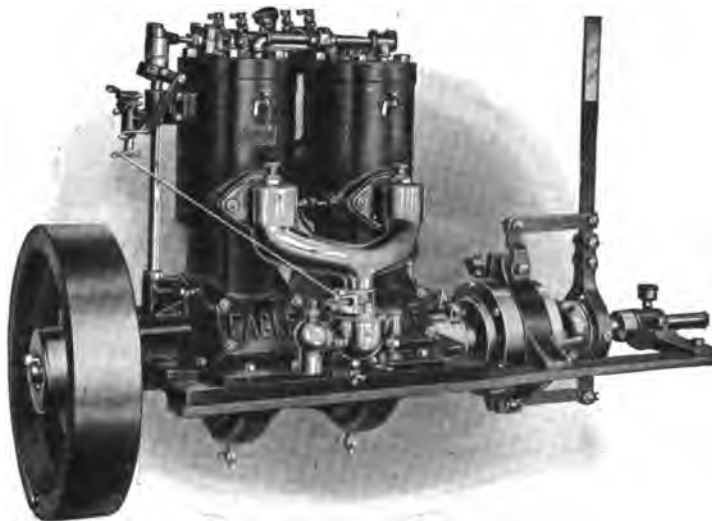
not from the fact that we have any particular advantage over others, *EXCEPT, as we apply it to organization, capital investment, and engineering ability.*

During the year 1910 we inaugurated a campaign of education relative to high-grade equipment with each engine. For many years the equipments that were supplied with most engines consisted of a screwdriver, cheap propeller, poor ignition outfits, cheap batteries, etc., thus enabling the price on engines and equipment to be catalogued at a low list price, handicapping the manufacturer who supplied a high-grade equipment, and had in mind fair treatment to his customer. Our campaign has borne fruit. During a recent exhibition of engines the quality of equipment shown was a great improvement, but upon inquiry we found a desire to get an extra price for the same grade of equipment as we supply with each engine, and you will be asked to pay an advanced price unless you insist on having your equipment such as we supply at the lowest list price and which we furnish at the price as shown in our catalog.

We have always maintained that nothing could be saved by using a cheap equipment with an engine. The requirements are such that the best supplies obtainable should be a part of each engine equipment. You will find by reference

to our catalog that we furnish only one grade. *But stop there. Read what we supply,* and from the standpoint of modern practice every article is the best and highest grade obtainable.

There is character in engines just as there is in men. We learn to know them by the same standards that we apply to people. We recognize the value of goods by appearance, quality of material, workmanship, efficiency and frequently by something else—their *name*—which represents in concrete form the character, quality and fitness of the maker. The word "EAGLE" on a marine engine is assurance that they represent the best there is in *Marine Engines* from every point of view.



A most complete nest of Heavy-Duty Eagles, with a 12-year reputation for Efficiency—our catalog, which is free, tells you all about them

Secure a copy of our new catalog, it is free merely for the asking, and really it is worth your time to make the request. You will find a great amount of information that will interest you, and take our word that it is nicely printed and handsomely illustrated

THE EAGLE CO. 98 Warren Street NEWARK, N. J.

DISTRIBUTORS

A. P. Homer, New England, 88 Broad Street, Boston, Mass.
Bruna-Kimball Co., Inc., 134 Liberty Street, New York City
Barden Electric and Machinery Co., Houston, Texas

W. E. Gochenaur, 631 Arch Street, Philadelphia, Pa.
Bell Motor Co., Norfolk, Va.
306 South Hanover Street, Baltimore, Md.
Stauffer, Eschman & Co., Ltd., New Orleans, La.



Bei Bestellungen beziehen Sie sich bitte auf THE RUDDER

QUARTER-DECK TALK

40TH COMMISSION DAY

The Williamsburgh Yacht Club celebrated its 40th "Going-into-Commission Day" on May 7th, and one of the largest assemblages known to the club was present. Yachtsmen from Melrose, Morrisania, Seawanhaka, Orum and Clason Point yacht clubs attended, and everyone was made to feel at home. The next entertainment and dance on Decoration Day, May 30th, the members hope to make the most successful in the history of the club, and extend a cordial invitation to all yachtsmen.

* * *

BLANCHARD OIL ENGINE

Wolcott Remington, well known as a designer and manufacturer of oil engines, has associated himself with the Blanchard Machine Company, Cambridge, Mass. He is now engaged in getting out for them a line of stationary and marine oil engines, ranging from 10 to 100-h.p., which will be manufactured under the name of the Blanchard Oil Engine.

* * *

BOSTON BRANCH

The Lunkenheimer Company has recently opened a new branch store at 138 High Street, Boston, where they are carrying a full line of Lunkenheimer high-grade engineering specialties, consisting of brass, iron, "puddled" semi-steel and "crucible" cast-steel globe, angle, cross, pop, safety, blow-off, check, gate and non-return boiler stop valves; whistles, injectors and ejectors; cocks, oil and grease cups; lubricators, oiling devices, oil pumps; water columns and gauges, automobile and power-boat specialties. Mr. William W. Beal is in charge of the store, which occupies a very prominent corner on High Street, and the windows present an attractive display of the various specialties made by The Lunkenheimer Company. This Company is not only the largest manufacturer of high-grade engineering specialties in the world, but they manufacture the greatest variety of these specialties. The general offices and works of the Company are located in Cincinnati, Ohio.

* * *

SPEED INDICATOR

For years the owners of small yachts have wanted something in the nature of a speedometer, that would show them how fast their boat was going; but, although the market has been flooded with different things to show the speed of an engine, it remained for the Nicholson Ship Log Company to produce the very thing that thousands of power-boat and small yacht owners have been looking for. The new Nicholson Speed Indicator is handsomely made up in brass, with a frosted face, and can be located in the cockpit of a small launch, or against the bulkhead of a cruiser, and the installation is so simple that it can be put in in a very few hours by any one possessing ordinary mechanical tools; and, above all, the device itself is so hardy that it is difficult to see how it could get out of order. This new indicator is certainly a most interesting thing to watch, for as soon as the boat starts to move, the needle of the indicator begins to rise, and continues to do so, until the full headway is attained, where it remains until something occurs to check the speed, when the needle instantly shows it. For instance, if the boat is traveling 12 miles, and the helm is put over, the indicator will drop to about seven and one-half miles on the turn, showing the exact amount of speed lost by the turn. Another point that struck the writer forcibly, was, the use made in regulating the engine; various adjustments attempted showed more or less speed on the indicator, so that the most advantageous adjustment was obtained in a very few minutes, which could otherwise only have been gotten after weeks of trial, and then the result would not have been certain. Still another interesting point was to see the difference in speed caused by steaming into a head wind and sea, and then turning and running with it. Lack of space prevents us from printing any more extended notice of this device, which we consider one of the most valuable produced; and, as the price enables any boat owner to secure one, it will undoubtedly become very popular this coming season. Barrett & Lawrence, Inc., Bullitt Building, Philadelphia, are the sole agents for the Nicholson Instruments, and will, no doubt, take great pleasure in answering any questions readers of The Rudder may care to ask.

SCHRACK'S PAINTS

The house of Schrack & Company, one of the oldest concerns in this country, having been established since 1816, are making a specialty of their Anti-Fouling Yacht Paint this year. After some very exhaustive tests, a number of boat builders in the East have adopted it exclusively. They make some very broad claims for their product, and with their reputation of almost a century of square dealing, the claims they make are worth considering seriously. In New York City, C. D. Durkee & Company, of 2 South Street, and George M. Auton, of 26 South Street, carry a complete line in stock, as well as almost every other ship chandler and supply house in town. They have numerous agents throughout the country, to whom they refer for the convenience of all yachtsmen. To any one interested in Anti-Fouling Paints the firm of C. Schrack & Company, 152 4th Street, Philadelphia, Pa., will furnish some pretty conclusive tests that have been made on boats on various parts of the Atlantic Coast. They make a very liberal guarantee for the paint when used for racing boats.

* * *

WATERPROOF LIFE-PRESERVERS

The Welin Davit and Lane & DeGroot Company of 305 Vernon Avenue, Long Island City, N. Y., are having unusual success with their special light-weight wooden life-preservers. A special wood from Central America is used. The wood is cut up in bricks 9 inches high against the usual 14-inch size cork life-preserver. This special wood is exceptionally light, and the complete life-preserver weighs but 5 lb, which is about 2½ lb lighter than the ordinary cork preserver, and at the same time it will sustain more weight. The wood is cut from logs from 3 to 6 feet in diameter, and treated by a special process which fills all pores, making the wood impervious to water, and practically indestructible. Aside from their saving weight, they occupy less space, and are sold for \$1.00 apiece, which is the regular price of a good cork-filled preserver, that does not last as long or store away in a small space. The special preservers manufactured by this Company are far cheaper in the end.

* * *

WATERPROOF CLOTHING

Nothing is more annoying to those on a pleasure cruise than inclement weather, and this is rendered all the more aggravating when the occasion calls for the wearing of the heavy and greasy oilskins. It is far from pleasant to be caught in a sudden shower, and when about to don the waterproofs to find they are not waterproof, but require oiling first. This is such a frequent experience of yachtsmen and power-boat men that the announcement of clothing that stays waterproof will be welcomed by all of us. ImpervO is the name of this clothing, and the manufacturer, Mr. A. A. Armstrong, reports its success has been extraordinary. Mr. Armstrong is well known as a manufacturer of waterproof clothing, his "RainO" clothing being quite familiar to the great majority of yachtsmen. ImpervO is offered as a vast improvement over anything previously made by him, so little argument should be required to convince users of the merit of the new material. ImpervO is very light, very flexible, and absolutely waterproof in even the heaviest storms. It is never sticky, greasy, gummy or stiff, like ordinary waterproof clothing used hitherto, and will not crack, peel or blister. Not a particle of rubber is used in ImpervO; it is a special kind of cloth, waterproofed by a special process, which is the manufacturer's secret. Most of our readers are familiar with the ordinary oilskins, rubber clothing and cravenettes, but ImpervO resembles neither of them, although it embodies the advantages of them all but has none of their faults. Altogether it is the most convenient, sanitary and best to wear waterproof clothing the market affords. ImpervO can be obtained from agents in various cities, a list of whom is given in the ImpervO advertisement.

* * *

HYDE PROPELLERS

At Palm Beach the winning power boat T & S, which won the Grand Prize Race for \$2,500 in gold, was equipped with a Hyde Turbine propeller. The Hyde Windlass Company of Bath, Maine, who built this propeller, offer to furnish a suitable line of wheels to manufacturers throughout the country, or will supply to individual owners wheels suitable for the power of their engines, enabling them to get all speed possible and full engine efficiency.

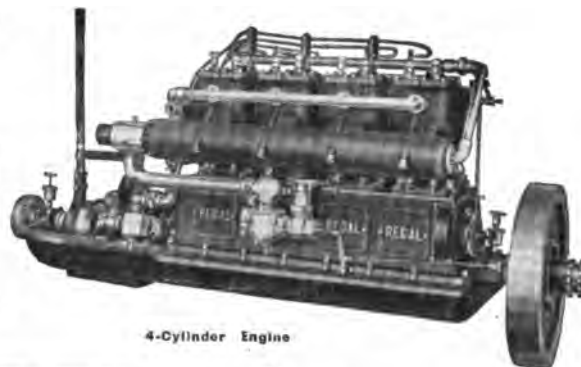
10 Years' Successful Building Behind Every Engine

**BUILT FOR WORK AND
PLEASURE BOATS**

A REGAL

ENGINE will run year after year and not require a cent outlay for repairs or replacement

Kerosene attachments for use where gasolene is scarce
**Heavy-Duty Type, 5 to 45 H.P. Make-and-Break or
Jump-Spark. High-Speed Engines, 3 to 24 H.P.**



4-Cylinder Engine



Launch "DORIS," 30 ft. o.a., 7½-ft. Beam, 2½-ft. Draught, Speed 10 miles, 20-H.P. 4-Cycle Regal Engine. L. L. Owens, Plymouth, N. C.

REGAL GASOLENE ENGINE CO., 59 West Pearl Street, Coldwater, Michigan

Regal high-speed engines are especially adapted for fast runabouts and high-speed cruisers.

Large bearings and ample metal used in construction enable Regal engines to deliver their full rated power at top speed all day long. They start easily and run continuously.

The BRIDGEPORT

"THE MOTOR THAT MOTES"

This illustration shows several superior features of the Bridgeport.

If you desire reliable service from your boat, install a Bridgeport now, don't wait and change next year.

SEND FOR CATALOG

**The Bridgeport Motor Co., Inc.
BRIDGEPORT, CONN.**

Pacific Coast Distributors—DOAK GAS ENGINE CO., Oakland, Cal.

New York, N. Y.
BOWLER, HOLMES & HECKER CO.
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G. E. ROBERTS

Bei Bestellungen beziehen Sie sich bitte auf THE RUDDER



"The Automatic"

**We cut your gasoline expense
right in half**

and give better service at that.

The way to save expense in fuel is to see that all the heat power of the gasoline is utilized to propel the boat. How much of the heat power of your fuel is being used to turn useless wheels and shafts in your engine? In

The AUTOMATIC MARINE ENGINE

simplicity of construction, combined with equal strength, eliminates all waste of power. This is the wonderful independent-cylinder engine of which you must have heard, if you've kept your ears open.

Because of its simple, sensible construction all the power propels the boat, and that is why greater speed is possible with **The AUTOMATIC**, why there is little or no vibration, and why all users of **The AUTOMATIC** have low fuel bills instead of startling ones.

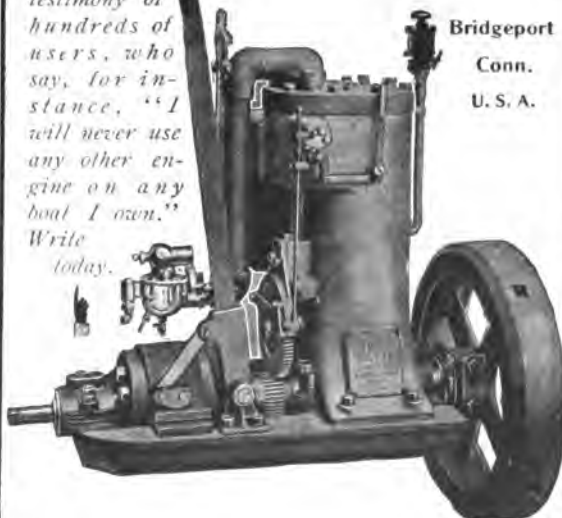
It's an engine that never needs repair; never holds you ashore; cannot possibly break down because of independent cylinder construction.

*Write for our
catalog and
find out;
write for the
testimony of
hundreds of
users, who
say, for in-
stance, "I
will never use
any other en-
gine on any
boat I own."
Write
today.*

We allow you something on your old engine. Send us the dimensions of your boat and let us quote.

The Automatic Machine Co.

Bridgeport
Conn.
U. S. A.



Hagan el favor mencionar el RUDDER cuando escriben

LUBRICATION

The Detroit Lubricator Company of Detroit, Mich., have recently issued a very interesting booklet on gas engine lubrication, with particular reference, of course, to the Detroit Force-Feed Oil. While the marine end is well taken care of, the book covers all lubrication for all stationary engines, automobiles, commercial trucks, gas tractors, etc. It is one of the most valuable pieces of work on gas engine lubrication that has been issued up to date, and is well worth the study of every gas engine user.

A NEW AUTO STEERER

A new steering wheel and controls recently designed by the Bath Marine Construction Co. of Bath, Me., was exhibited by them at the boat show. There have been many types and styles of auto steering wheels put on the market—and good ones, too—but their use has been confined to the more expensive and luxurious boats, owing to their high price, and the average power-boat man, although wishing to have an up-to-date and stylish steering gear, has had to resort to the common and insignificant side or launch steering wheel. In this new creation, the designers have met all the advantages of, and improved on, any previously put out, it being handsome enough for the finest boat, and at the same time at a price which is little advanced over the common side steerer, and within reach of all. The steering column is built up of heavy brass tubing, with brass web and laminated mahogany rim 14 in. in diameter and is attached to the bulkhead by means of a brass flange, the whole highly polished. The column has a good rake aft, and is 22 in. long, which brings the wheel to a comfortable position for the steersman. The barrel type has been adopted, so that it may be placed at one side if desired, a feat which is impossible with a rack and pinion gear, as the rack strikes against the sides of the boat. A brass finger projects under the barrel, to prevent the rope from falling off, should it become loose. The spark and throttle controls are led up inside the steering column with levers which work on a quadrant right at your finger tips, and are on the left-hand side, so that the right hand is free to operate the wheel or reverse lever, or by loosening a nut they may be swung to the other hand, if desired. The controls extend through the bulkhead, and are connected by levers to the timer and throttle on the engine. Having manufactured a large quantity of these outfits, the Company is prepared to fulfill all orders on short notice at a marvelously low price.

OPEN AGENCIES

The Ferro Machine & Foundry Company announces that there are still a few good locations open where they have no representatives or dealers handling their marine engines. Particulars can be obtained by writing the Agency Department of the Ferro Machine & Foundry Company, Cleveland, Ohio.

SPEEDWAY ENGINES

The new 138-ft. steel power yacht for Mr. Morton F. Plant, New York Yacht Club, is rapidly nearing completion. This boat will act as a tender to the new racing schooner which he has had built. Two 6-cylinder, 300-h.p., air-starting and reversing Speedway engines are being installed. The new 90-ft. twin-screw Speedway power yacht Raven, for Mr. Carl G. Fisher of Indianapolis, will be launched within a few days. The 40-ft. mahogany speed launch which was exhibited at the New York Show in Madison Square Garden, last February, was shipped to Mr. Fisher at St. Joseph, Mich., last week. Mr. J. C. Eaton of Toronto, Canada, is having a 32-ft. Speedway runabout built for service on Muskoka Lakes. Mr. H. W. Rock, Lake Charles, La., has purchased the 42-ft. cruiser Brownie II, and changed the name to Onward. This boat was shipped to Galveston recently. Mr. James R. Sheffield is having a 30-ft. Speedway runabout built for use on Saranac Lake, and Mr. Arnold Wood a 37-footer, for use at Bar Harbor. Mr. S. W. Bonsall has bought the 47-ft. twin-screw power boat Nawquisi, and changed the name to Here and There. Mr. C. B. Baldwin has bought the 37-ft. hunting cabin cruiser Niobe from George McMinn. Mr. A. H. Schmidt's new 50-ft. Speedway power yacht is ready for delivery. This boat will be used in the vicinity of Detroit. Mr. Henry B. Joy's new 65-ft. Speedway power yacht is progressing rapidly. Mrs. E. V. Z. Lane has ordered a 30-ft. Speedway runabout, for use on Saranac Lake.

GLOBE

The Real Heavy-Duty Engine

AND

EDDYSTONE-GLOBE

The Open Crank Case Engine

4-Cycle Type, 2 to 4 Cylinders, 16 to 110 H.P.

2-Cycle Type, 1 to 6 Cylinders, 6 to 48 H.P.

WRITE FOR CATALOG OF TYPE DESIRED
AND GIVE DIMENSIONS OF YOUR BOAT

PENNA. IRON WORKS CO.

EDDYSTONE, PENNA.

(SPECIAL PRICES FOR EXPORT)

REBUILT ENGINES FOR SALE, 25 TO 90 H.P.

Stanley Marine Motor

Make-and-Break Ignition

STRONG DURABLE RELIABLE

Two-
Cycle
Two-
Port

Water-
Cooled
Exhaust

Single
and
Double
Cylinder



5 Horse-Power Motor

Made in
Sizes
2½ to 15
H.P.

Highly
develop-
ed for
power to
given
size of
Cylinder

Low in
Price

Our Catalog is full of information for all who are about to decide upon a motor. Write for it. It will interest you.

THE STANLEY CO., 79 Milk St., Boston, Mass.



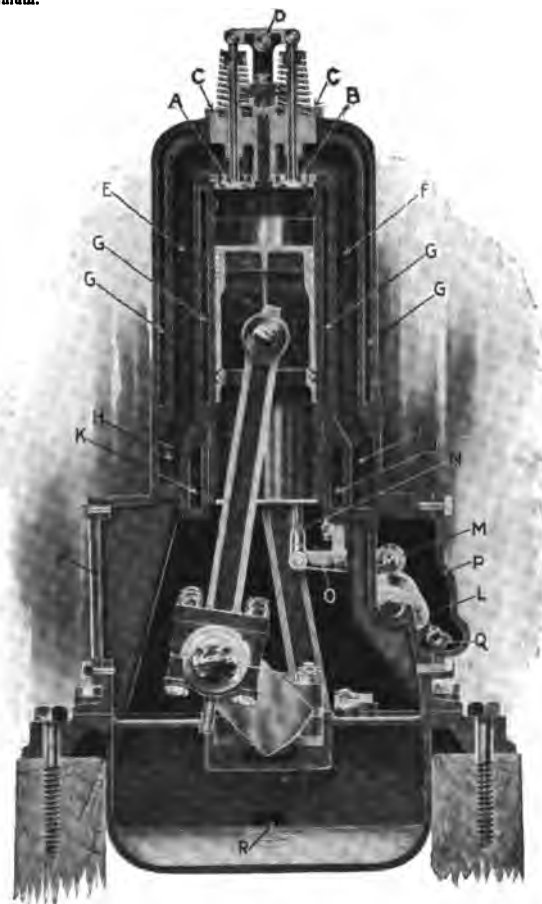
The highest grade of perfection in material and workman-ship. An Engine that represents the most advanced ideas in gas engine design.

Absolutely the most simple four-cycle engine built.

A high-grade, medium-weight, medium-speed engine for cruising and commercial boats.

No outside piping; no troublesome oil feeds or oil pipes—the lubrication being accomplished with an automatic splash system,

All valves set in cages in the head, and both valves are operated with a single cam and push rod, thereby reducing the noise and the number of moving parts to a minimum.



Note the Simplicity and send for catalog giving detailed information.

THE S. M. JONES COMPANY

Main Office and Factory, 804 SEGR AVENUE, TOLEDO, OHIO

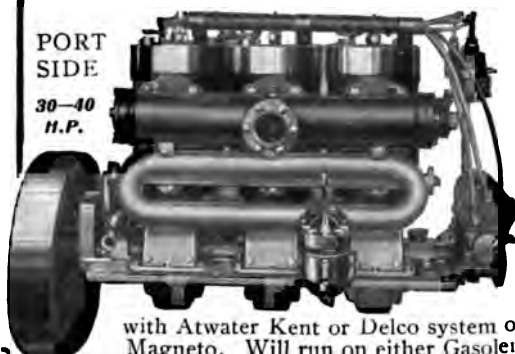
New York Office, 136 Liberty Street

Some desirable territory open for reliable agents.

THE 1911 BROWN MOTOR

PORT
SIDE

30-40
H.P.



Made in sizes
from 1 H.P. to
80 H.P.
One to Six
Cylinders

These motors
are designed
and built to
run at from
200 to 1,200
revolutions
per minute,
and STAND
UP. Fitted

with Atwater Kent or Delco system of Ignition, and Magneto. Will run on either Gasolene or Kerosene. Either salt or fresh water equipment.



Type 1, Model A. 1 H.P.

THE BROWNIE CANOE ENGINE

The hit at the New York Motor Boat Show. We sold them to engine builders and engine experts who declared they were the best small engine there. When our competitors buy them for their own use that's endorsement enough.

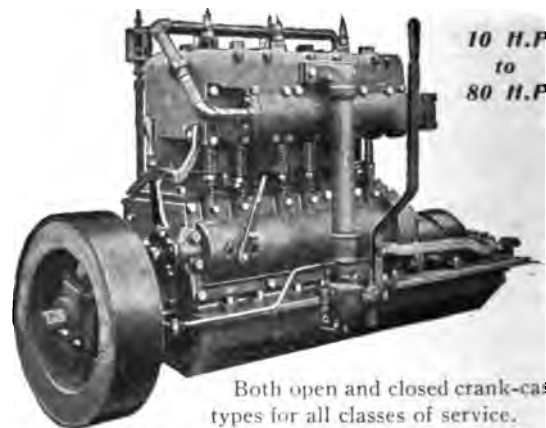
The finest built and finest running two-cycle motors ever designed. Before buying your motor for 1911 write and get new catalog and prices from the

B. F. BROWN GAS ENGINE CO.

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Formerly 402 S. Franklin St., Syracuse, N. Y.

N. Y. Agent: Eastern Motor Sales Co., 1680 Broadway
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Clifton Marine Engines



10 H.P.
to
80 H.P.

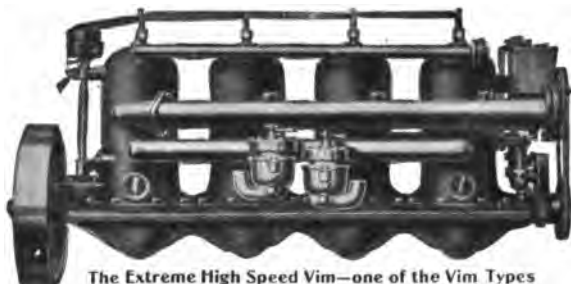
Both open and closed crank-case
types for all classes of service.

The Clifton Motor Works

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W. K. Thomas, Motor Mart Buildings, 1876 Broadway, N. Y. City
Loane-Hiltz Engineering Co., 306 South Hanover St., Baltimore, Md.
Albert M. Darling, Northwestern Representative, Olympia, Wash.
C. T. Patterson Co., New Orleans, La.
Hayward & Garrett, Exclusive Agents, Dunedin, New Zealand
Gray-Aldrich Company, Inc., 7 & 8 Commercial Wharf, Boston, Mass.
National Engineering Co., 419 Cordova St., Vancouver, B. C., Canada.

The Vim will verify the good
you've heard of it



The Extreme High Speed Vim—one of the Vim Types

Standard	Heavy Duty	Extreme High Speed
Ten types—one to four cylinders—3 to 36 H.P.	Four types—one to three cylinders—3½ to 18 H.P.	Five types—two to four cylinders—13 to 55 H.P.

VIM MOTOR

The most perfect two cycle Motor made.

If you have heard the same splendid reports of Vim reliability, economy and durability that Vim owners voluntarily give to us, you have doubtless formed a good opinion of the Vim.

We want to say to you right now that the Vim is worthy of everything good you have heard about; and we urge you to confirm, by personal experience, what you have heard.

Begin by observing the behavior of a Vim, if you can conveniently do so. Note how economical it is of fuel and oil; how willing it is; how it delivers the desired result in speed or power—and, above all, how free from trouble and repair.

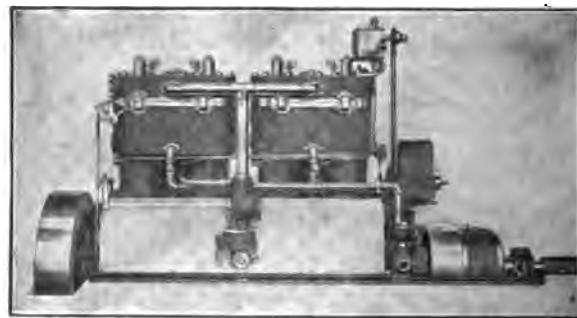
Doubtless you can do this in your home waters; and if you do we have no doubt you will become a Vim enthusiast, and not rest content until you have a Vim in your own boat.

If you don't know a Vim owner, we shall be glad to send you the literature and the opinions of men who own our motors in preference to any other.

THE VIM MOTOR COMPANY, 8 Water St., Sandusky, Ohio

Representatives: Southwestern New York, Connecticut and Northwestern New Jersey, Otto Gas Engine Works, 136-138 Liberty St., New York; Portland, Me., G. D. Thorndyke Machine Co.; Central New York, W. D. Dunning, Syracuse; Baltimore, Md., E. P. Burton; Northwestern Washington, Marine Supply Co.; Tacoma; Northwestern Ontario, Capital Boat Works, Ottawa, Ont.; Philadelphia, Pa., W. S. Carman, Bourse Building; Quebec, I. L. LaFleur, Ltd.; Portland, Ore., Gas Power and Supply Co.

The 20th Century



2, 3, 4 and 6 Cylinders 10 H.P. to 300 H.P.

Marine Gasolene Engine

means just what the name implies. It is the engine of the 20th century. Some of the many advantages are

Neatness of Design, Ease of Operation, Simplicity of Construction, Absence of Vibration and Noises, Economy of Fuel, Moderate Revolutions and Ample Bore and Stroke

To sum up, the 20th CENTURY ENGINE embodies all the latest improvements, together with a standard of construction that will take others years to equal.

MANUFACTURED SOLELY BY

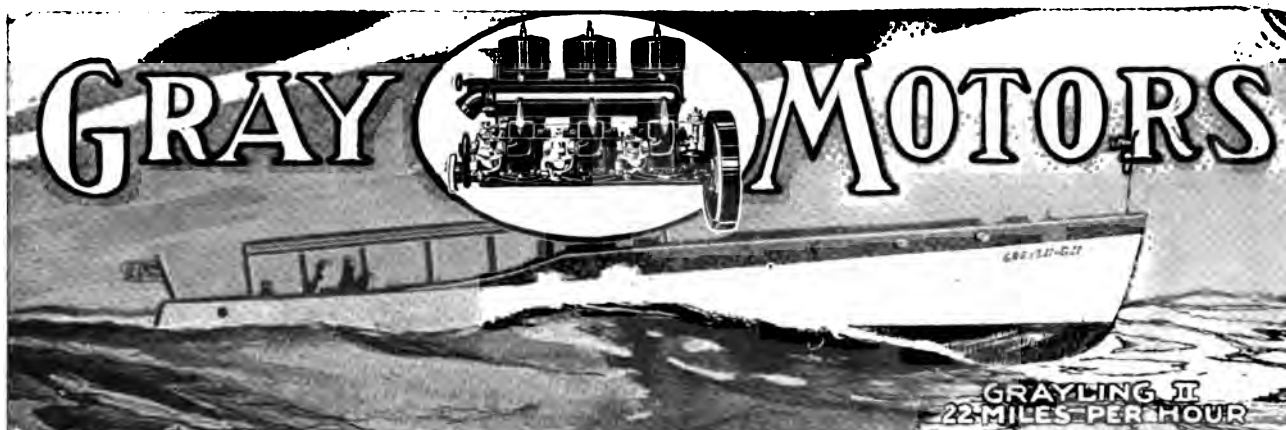
THE NEW YORK YACHT, LAUNCH & ENGINE CO.
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Builders of Yachts, Launches and Business Boats of all descriptions.
High-class Workmanship a Specialty
Design and Construction Unsurpassed—Joiner Work Unequaled
Prices Phenomenally Low

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21 minutes from Grand Central Depot

PHONE 346 TREMONT



Accessibility of Model "T"

It took 14 minutes for an inexperienced man to disassemble the motor as you see it — the first time — it took less time to put it together again. He said he could do it a second time in 10 minutes.

Removable cylinder heads. (The most accessible engine built.)

Cylinder can be removed without interfering with the bearings, exhaust manifold, gasoline or exhaust piping.

Pistons can be removed without removing the cylinder, simply take off cylinder head and remove two large hand hole plates on the side.

YOU KNOW what accessibility means in a boat.

That's only one of the features of a Gray Model T. 1, 2 and 3 Cylinders, 7 to 36 H. P.

Gray Model "T"—A High Class Marine Motor for Speed Boats, Pleasure Boats, Work Boats and Cruisers

More features of real value than any other marine motor in the world.

Operates on gasoline or kerosene fuel.

Combination two and three port. Perfect compression—starts on spark.

Made in 1, 2 and 3 cylinder sizes—7 H. P. and upwards. Ask for figures on 36, 72 and 108 horsepower plants.

Equipped with Bosch high tension magneto.

No water pipes exposed.

Lubricates through gasoline.



12 H. P. complete outfit, all ready to install in your boat \$188.00

This 2 cylinder motor is a remarkable engine on account of the power it will develop. They always develop much more than the rating calls for. It's this reserve power that wins races. In a Test by the Massachusetts Institute of Technology, one of these 12 H. P. motors developed 17½ H. P. Their smooth running qualities make them the choice of the man who wants an engine for a pleasure boat and their access power developed is their best recommendation for speed boats.



3 H. P. complete outfit guaranteed to develop 4 H. P. \$60

The same workmanship, the same quality and material—the same strong guarantee as our \$225 motor. The broad experience—the splendid equipment and absolute guarantee behind the Gray Motor—insure you a satisfactory motor and a real motor satisfaction.

6 H. P. complete outfit guaranteed to develop 7 H. P. \$89.50



Electric Light Outfits

For Yachts, and Private Houses, Small Factories and Stores.

Close connected Engine and Generator mounted on single base.



How To Select a Marine Motor

First write for our big marine catalog, the largest and most complete gas engine catalog ever published. Gives details and information you should know.

Tells the truth, and a lot of it, about Gray Motors.

You will know exactly what to expect and get if you decide on a Gray.

Will give you a lot of general motor information.

It's a real education in marine motors—their construction, use and design.

It will tell you where you can see the latest type of a Gray Motor in use.

But better still it will carry our urgent invitation to visit our big plant—where you can see the care we take in manufacturing, testing and shipping and care of our motors after they are sold.

A Wonderful Marine Engine Factory



Detroit has become the recognized center of the gasoline automobile engine industry. Here are located many small marine and stationary engine builders and notably the largest business of its kind in the world. The Gray Motor Company—known wherever the motor boat enthusiast discusses the merits of gas engines.

There are more gasoline motor experts and high grade gas engine mechanics in Detroit than any other place in the world. Here are located the largest automobile plants in the entire world.

For years the Gray Motor Company has had the largest factory in the world devoted exclusively to the manufacture of two cycle marine gasoline engines, and it has recently moved into a still larger factory building 150 feet wide x 1040 feet in length.

Every important part of Gray Motors is made in our big factory, so that we are able from our own knowledge of the selections of materials and careful machining of every part, to guarantee each engine in the broadest possible manner.

No marine gas engine business in the world has grown like this—the heads of departments have developed with the business, and they are in sympathy with both the welfare of their concern and the needs and demands of their customers. They watch the details, and this attention to detail has produced the largest marine gasoline engine output in the world.

GRAY Farm - Pumping and General Power Motors

Gasoline or kerosene, 3 to 36 H. P.

6 H. P. Farm Engine \$94 to \$124 complete.

3 H. P. Farm and Stationary Engine, \$65, guaranteed to develop 4 H. P.

24 H. P. Irrigation Pumping Engine, \$346—36 H. P. for \$560.



GRAY MOTOR CO., 636 Woodward Ave., Detroit, Michigan.

Canadian Gray Motors Ltd., 636 River Front St., Walkerville, Ont.

The Dawn in Motor

COMBINATIONS of manufacturing enterprises are of two kinds: first:—those formed to throttle competition, boost prices, control the output of products, and thus create enormous private fortunes; and second:—the spontaneous getting together of manufacturers of the same general product to enable them to conduct their business better and more economically; to increase their purchasing power; to reduce their executive and overhead expenses and selling costs; to concentrate the brains and ability of each upon the problem of the whole, and thereby give to the buying public a better and more standardized product at less cost.

The National Boat and Engine Company is of the latter kind. It is the leader in a great and rapidly growing American industry. It was created to meet the enormously increased demand for motor boats, which, as a recreation and sport, is at present commanding greater public favor than any other means of locomotion for pleasure.

The strength of a concern is measured by the men in it. The officers of this Company, active, practical men who have made the motor boat industry what it is to-day and, by their consolidation, open the way to greater development than has ever before been possible, are as follows:

- Mr. W. J. Reynolds, President; formerly President of the Racine Boat Manufacturing Company.
- Mr. J. M. Truscott, Vice-President; formerly President of the Truscott Boat Manufacturing Company.
- Mr. C. A. Williams, Secretary; Secretary of the Charles H. Fuller Company, Publicity Expert.
- Hon. John Q. Ross, Treasurer; Lieutenant-Governor of the State of Michigan.

The Board of Directors is composed of these gentlemen and the officers of the various plants included in the National Boat and Engine Company.

The National Sales Organization

A typical example of what this Company is doing to make it possible for everyone to own a motor boat and partake of the joys that life in the open brings, is seen in the establishment of the enormous selling agencies in all parts of the country where full lines of standardized boats can be purchased at new National prices. The great stores and show-rooms at New York and Chicago, with branches in all large cities, and agents wherever motor boats are used, bring to your door the pleasures and benefits of this wonderfully healthful sport.

of a New Era Boat Building

An Old Business Made New

THERE are ten great companies included in the National Company, covering a combined floor space of over three hundred thousand square feet, and having a capacity of five thousand boats of all kinds per year. But do not think because this new idea in motor boat building and selling is now applied to the industry, that the companies which compose it are new also. They represent all that is stable, solid, sure and experienced in motor boat building, and the individual plants and companies are and always have been the leaders in the motor boat world in their respective lines. Their boats have been known as the finest products of boat building experience, and NOW you can get the output of these great plants and builders, standardized and perfected to a higher degree than ever before.

We Cover the Entire Field of Motor Boat Building

We offer you anything and everything in the way of motor craft and small boats that can be desired—all built to one high standard, and sold under one broad guarantee. The Government has recognized the economy of our method of construction, and our superior facilities, and we are executing at the present time many Government contracts for light ships, tugs, light-house tenders, life boats, etc.

We Offer Complete Service

We exhibit at our various show-rooms for inspection, trial and prompt delivery, a complete line of cruisers, launches, row-boats, dingies, canoes, engines, and accessories. Here the man of moderate means can find a boat as low in price as \$20, while the man of wealth can select a palatial yacht or high-powered speed boat.

National Boat & Engine Company

1210-1212 Michigan Avenue, Chicago

Factories Are In:

West Mystic, Conn. Muskegon, Mich. Bay City, Mich.	Michigan City, Ind. St. Joseph, Mich. Kankakee, Ill.	Shell Lake, Wis. Lake Geneva, Wis. Ashland, Wis.
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New York New Orleans Boston St. Louis	Rochester Chicago San Francisco Baltimore	Philadelphia Washington, D.C. Buffalo Seattle, Wash.	Jacksonville, Fla. Bridgeport, Conn. Detroit Pittsburg
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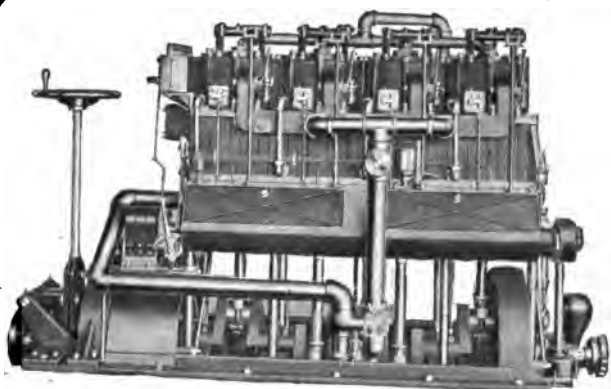
NATIONAL BOAT & ENGINE CO., 1210-1212 Michigan Ave., Chicago, Ill.

Gentlemen: Send me please, without obligation on my part, detailed information concerning a _____

_____ ft. (State size and kind of boat interested in)

for service in _____ (State whether for inland lakes, gulf, sound, river, etc.) waters.

Name _____ Address _____ City _____ State _____



Gasolene Yachts and Engines

Noted for Reliability

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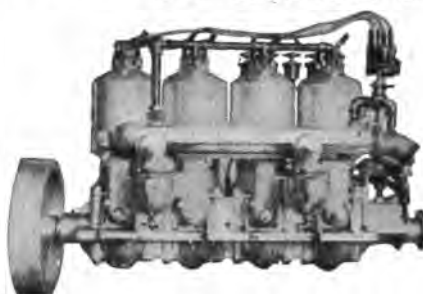


"LITTLE SKIPPER"

The only *simple* two-cycle gasoline engine that does not take the mixture into the crank-case. No backfiring—perfect lubrication. Most *compact* two-cycle engine built. Made in three sizes—2, 4 and 6 h.p. Over 4,000 "Little Skipper" Engines now in use. Write for catalog and attractive prices.

Monarch Tool & Mfg. Co.
123 Opera Place, Cincinnati, O.

"The Watertown"



The highest type of 2-cycle Marine Motor
1 to 6 cylinders
3 to 90 H.P.
Medium and Light-Weights
Medium and High-Speeds

Watertown Motor Company
Watertown, N. Y.

Bore 4 1/2 in., Stroke 4 in., 36 H.P.

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ROYAL ENGINE

Is Designed and built for Hard Continuous Work

It stands up under the most trying conditions. Only the best material used. Each part inspected and a thorough test given to each engine before we allow it to leave our hands. Single and double cylinder engines.

THE ROYAL ENGINE CO.

1043 Broad St., Bridgeport, Conn., U. S. A.



ARDMORE ENGINES

1 1/2 to 16 Horsepower, \$85 to \$400

TWO AND FOUR CYCLE

Simple, durable, compact, easy to start, requires less attention, develops more actual power, has less parts, and gives less trouble than others

Pistons, Tobin Bronze Shifting, Stuffing Boxes, Magnets, Dynamos, Batteries, Tanks and Engine and Launch Fittings

Want a Catalogue
HENRY KEIDEL & CO., Baltimore, Md.



BARKER MOTORS

"Imitated, but Not Equalled"

Fine mechanical features.

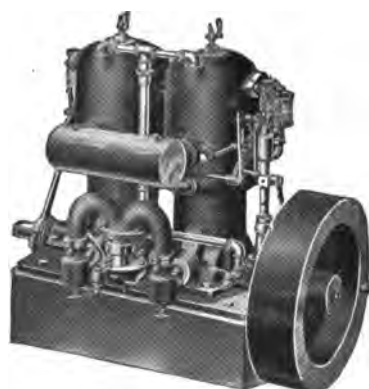
Honest power ratings.

Reasonable prices.

Manufactured by

C. L. BARKER,

Norwalk, - - - Conn.



HARTFORD 2-Cycle Marine Engines

MADE IN SINGLE AND DOUBLE CYLINDERS
THOROUGHLY GUARANTEED IN EVERY WAY

5 Sizes

From 3 to 10 H.P.

ASK FOR OUR CATALOG "M" AND PRICES

THE GRAY & PRIOR MACHINE COMPANY

Corner Windsor and Suffield Streets

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PORTLAND, ME. BRANCH: 117 Commercial Street

THE ORIOLE MARINE ENGINE

Built in Baltimore, *Running* Everywhere



Any Engine will run,
But how long will it
last?

← The Lifetime Motor

5 H.P. to 17 H.P.

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115-121 E. YORK ST. - BALTIMORE, MD., U. S. A.

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Capt. Larsen Navigating the Niagara Whirlpool
Rapids, Sept. 18, 1910.

FERRO MARINE MOTORS

Capt. Larsen staked his life on the Ferro Motor. Although his boat was terrifically buffeted around and twisted, the little stock model 8-H.P. Ferro enabled him to overcome conditions thought scarcely possible to surmount with even a 200-H.P. motor.

An engine that can stand the strain of Niagara can be depended upon to stand the hardest usage you can give it in everyday service.

Read more about this trip in our new interesting book, "Ferro Experiences from the Waters of the World." Just off the press. This book also contains many other interesting experiences of Ferro owners in all corners of the Earth. You ought to have a copy whether interested in buying an engine now or not. Send for it TODAY.



THE ENGINE THAT MASTERED NIAGARA

THE FERRO MACHINE & FOUNDRY CO.

LARGEST MARINE ENGINE BUILDERS IN THE WORLD
Main Offices and Plant: 53 Hubbard Avenue, Cleveland, O.
Representatives and Dealers in Principal Cities



A 12-Year Record For Speed and Stability

Buy an engine or boat on its record—not on claims or promises.

For 12 years the "Rochester" has been recognized as the most perfect example of the 2-cycle design in America. As a result, it gives an increase in power and a decrease in weight—unequaled reliability—low cost for the fuel and repairs—and exceptionally long life.

First and last the Rochester is *always* dependable as is shown by its wins in Reliability Trials.

ROCHESTER MARINE ENGINE

This engine does not disappoint. It keeps its engagements. It's always on the job. It always takes you "there and back." You can't get away from its 12-year record for *Reliability*. No other engine can *equal* this record. No other uses so little fuel. Send to-day for the Catalog that will clear away all your engine worries.

1911 models, one to six cylinders, 4 to 48 h.p. Immediate deliveries. Mechanical oilers, famous Atwater Kent Ignition. Starts on the Switch.

ROCHESTER GAS ENGINE COMPANY

110 Platt Street, Rochester, N. Y.

"The Leader in the Race"



THELMA II. Length 32 Ft., Beam 4 Ft., 70-H.P. Thelma Engine.
Speed 29 Miles

Tremendous power, compact, exclusive, no complications, simple and absolutely dependable.

Recognized by Detroit River motor-boat men as the most efficient motor-boat engine made.

Material and workmanship the best. Built for high speed motor boats, cruising launches and for heavy duty.

We design and build motor boats. Let us make you a boat complete with a guaranteed speed.

Write for descriptive circular of Engine and Motor Boats.

The Thelma Engine Works

268 Junction Avenue Detroit, Michigan

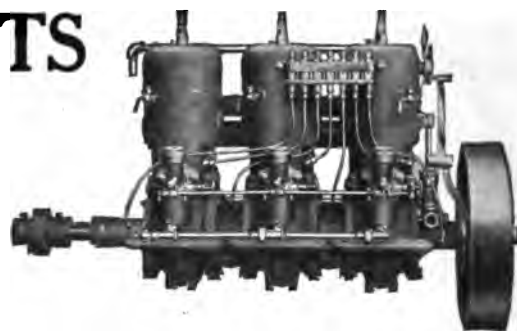
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We have tried unsuccessfully for days to think of some way to say things expressive and impressive enough to suit us and properly describe

TUTTLE MOTORS

Competitors all claim the "best" so that this word is useless. We have the thoughts all right and wish they could be transferred by wireless, but let us send you our catalog of truths which we guarantee to make good.

TUTTLE MOTOR COMPANY, 532 Holden Street, Canastota, N. Y., U. S. A.



FAY & BOWEN ENGINES

Tried and True

The leading two-cycle engines of the world. Absolute reliability. Built by the day and quality always maintained. Owners of the good old reliable Fay & Bowen machine have the comforting assurance that their engine will run in all kinds of weather. Our make-and-break sparking device never gets out of business when soaked by rain or spray.

Remarkable for fuel economy. Cheap in up-keep. Quiet. Easy to learn and operate. We guarantee them, and **We Can Prove All Our Claims.** Made in 2½ to 80 h.p. in both our regular gasoline type and our **Celebrated Kerosene-Gasoline Convertible Type.** Before you decide on any engine

Send for Our Catalog and Proofs

FAY & BOWEN ENGINE CO., 76 Lake Street
Geneva, N. Y., U. S. A.

"IDEAL" QUALITY

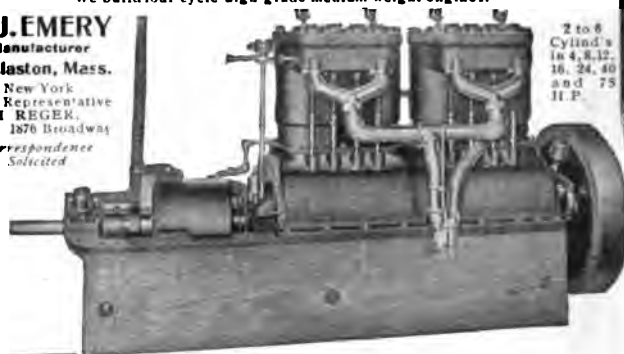
We build four-cycle high-grade medium-weight engines.

V. J. EMERY
Manufacturer

Wollaston, Mass.

New York
Representative
H. H. REGER,
1876 Broadway

Correspondence
Solicited



2 to 6
Cylinders
in 4, 8, 12,
16, 24, 40
and 75
H. P.



Van Blerck MARINE MOTORS

Built for Hard Service
Absolutely reliable and efficient
and fully guaranteed.

Catalog on request.
VAN BLERCK MOTOR CO.
DETROIT, MICH.
N. Y. Office, 133 Liberty St.



6 H. P. 50 lbs.

Watkins Special Motors

Aluminum base, copper water jacket, steel shaft, bronze bearings, special carburetor

WITHOUT A PEER

Especially adapted for Canoe or Light Boat
Catalog free Do not delay Send for it now

THE WATKINS MOTOR CO.

628-531 Beymiller St., Cincinnati, O.



3 H. P. 30 lbs.

JAMES CRAIG
Designer and
Constructor

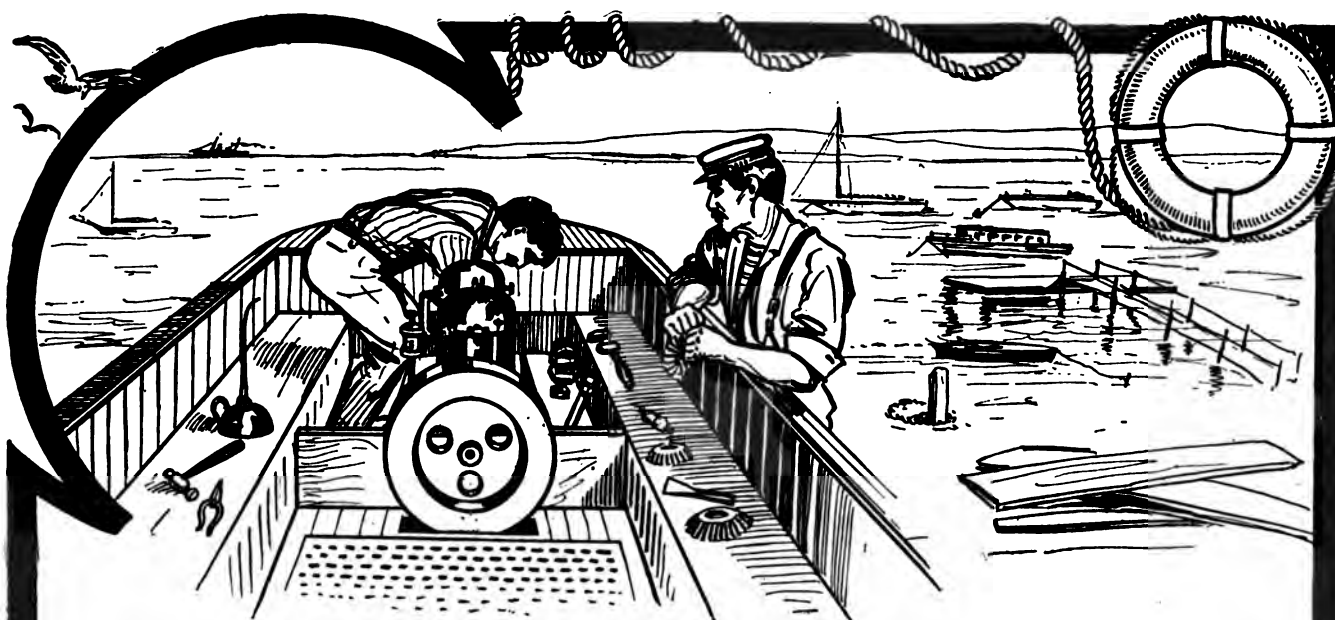
Marine Gasoline Engines

Feathering Propellers
Special Mechanism
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Tel. 2237 Bergen



AILS CRAIG
Crossing finish line at Bermuda

Winner of
James
Gordon
Bennett
Trophy
1907, 1908



Don't Experiment With Your Motor

USE

AUTO CARBON REMOVER

Dissolves all carbon deposits from gas engine cylinders, pistons, valves, spark plugs, mufflers, etc. Contains no acids; does not corrode metal; will greatly increase the power of any engine.

The oldest carbon remover on the market. Absolutely guaranteed. AUTO CARBON REMOVER absolutely does away with all carbon troubles, pre-ignition, knocking, loss of compression and power, etc. It is inexpensive, quick, clean and easy. Its use renders unnecessary the dismantling of engines to scrape out carbon in the old way.

Price, per quart can, 85 cents

Per half-gallon, \$1.60

Per one gallon, \$3.00

Ask your dealer or write us direct

WHITNEY CHEMICAL CO.

DEPARTMENT R

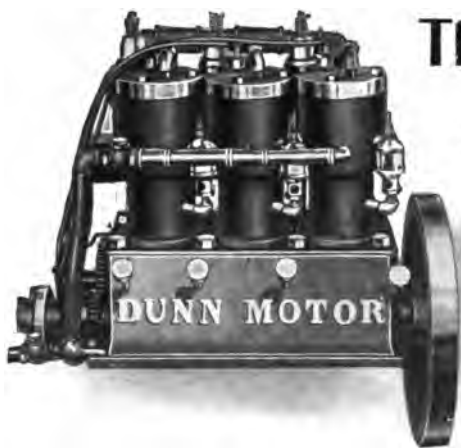
6122 Euclid Avenue, CLEVELAND, OHIO

WHITNEY
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Department R
6122 Euclid Avenue
Cleveland, Ohio

I herewith enclose \$
for which please send me
{ Quart Can } of your
{ 1/2 Gallon }
{ 1 Gallon }

AUTO CARBON REMOVER

Name
Address



The "DUNN MOTOR"

The best motor for the least money.
Ground cylinders, large ports and valves.

6 H.P. \$110.00

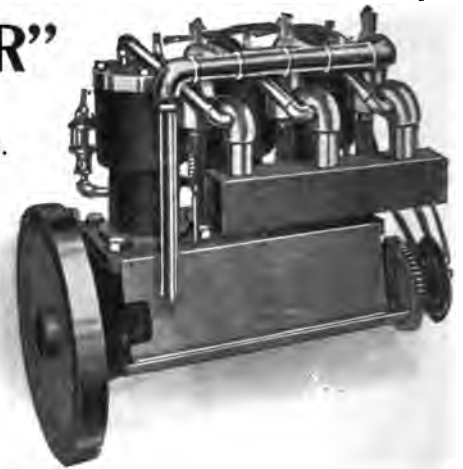
12 H.P. \$150.00

with regular equipment.

Get our Catalog, showing our complete line, all 4-Cycle.

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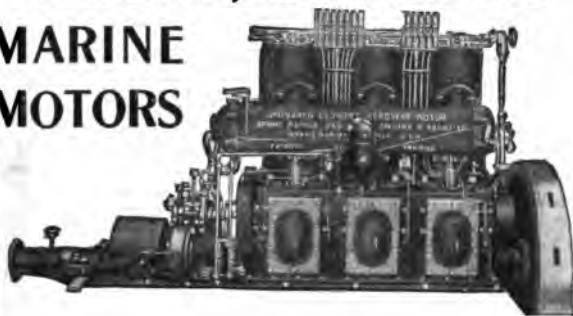
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Paraffine, Petrol or
Kerosene, also Gasolene

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MOTORS**



60 H.P. at 325 R.P.M. Pilot House Controlled
Four-Cycle Type 5 to 160 H.P. Four Sizes

Reliability and durability secured by slow speed,
perfect lubrication, large bearing surfaces, and
moving parts.

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Grand Rapids Gas. Engine & Yacht Co.
100 FRONT STREET GRAND RAPIDS, MICH.

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IS A VERY GOOD TIME TO GET A
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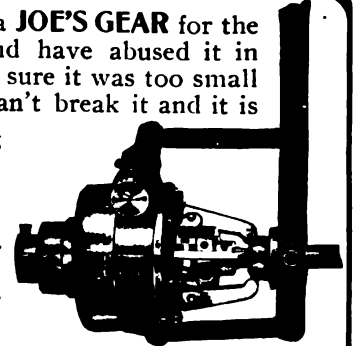
146 Pearl St., Boston, Mass.



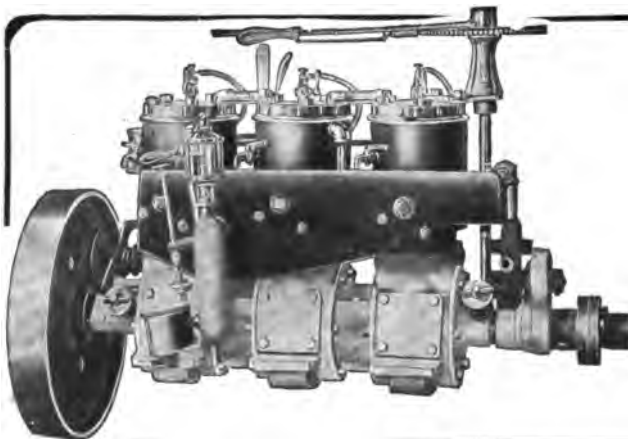
"I HAVE been using a **JOE'S GEAR** for the
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absolutely noiseless and
perfect in every way."

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THE BEST IN EVERY TEST

The Barber Marine Engine

Stands the Test under all Conditions

SPEED BOAT, PLEASURE OR WORK BOAT, IT
IS ALWAYS DOING ITS DUTY—KEEPS GOING

The engine for those who want satisfaction and full value.

If it looks good to you

GET OUR CATALOG AND PRICES

BARBER BROTHERS, Syracuse, N. Y.



"INTER-LUBE"

The great Power Producer and Internal Lubricant
(Non-Explosive)

Makes Engines Start Easy

INCREASES COMBUSTION, EXPANSION, LUBRICATION
INCREASES POWER AND MILEAGE ONE-THIRD
UNAFFECTED BY EXTREME HEAT OR COLD

If you are interested in obtaining more **sustained** power, good compression, and smooth, flexible running motor with high efficiency, then you are looking for "INTER-LUBE"

WRITE FOR DESCRIPTIVE CIRCULAR

Price \$1.00 Per Quart Can

Sufficient to compound 50 gallons of gasolene. Ask your dealer or write us direct

WHITNEY CHEMICAL CO.

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WHITNEY
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I herewith attach Dollar bill for which please send me quart can of your "INTER-LUBE"

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Address

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Supply Stations for Power Boats

Standard Oil Company of New York

WHERE LAUNCHES CAN LOAD DIRECT FROM OUR TANKS

NEW YORK CITY		HUDSON RIVER		LAKE CHAMPLAIN	
Foot East 120th Street Foot West 141st Street, North River Clason Point		Tarrytown Boat Club Tarrytown Yacht Club S. O. Co. of New York Corinthian Yacht Club Catskill Hudson Poughkeepsie Yacht Club, Poughkeepsie		Rouses Point Ticonderoga	
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BROOKLYN		LAKE ERIE		RHODE ISLAND	
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City Island (Robert Jacob) City Island (Ernest Roeder) City Island (N. Y. Motor Boat Co.)		Buffalo (Foot Erie St.) Buffalo (Foot Porter Ave.) Grand Island (At Buffalo end of Ferry Floss's Dock) Tonawanda		Portsmouth	
LONG ISLAND		ST. LAWRENCE RIVER		MAINE	
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Lloyds Neck Bayville Muntauk (Capt. E. B. Tutbill) Cold Spring Harbor		LAKE GEORGE AND ADIRONDACKS		Rockland Eastport	
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Lloyds Neck Bayville Muntauk (Capt. E. B. Tutbill) Cold Spring Harbor		Newport Charlotte Oswego		New Bedford Fall River East Boston Dorchester Buzzard Bay	
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Lloyds Neck Bayville Muntauk (Capt. E. B. Tutbill) Cold Spring Harbor		Lake George Lake Placid		Newport Charlotte Oswego	

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Headquarters of Launches at Clayton, N. Y.

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AMERICAN POWER BOAT ASSOCIATION

1911

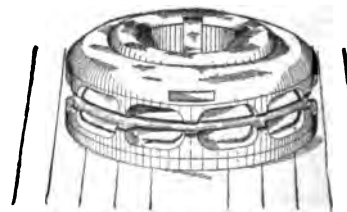
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2 & 3 SOUTH STREET NEW YORK



SCRIPPS MOTORS

THE time—a moonlight night in June. The place—in your boat on a quiet stretch of placid water. The girl—you can attend to that detail yourself.

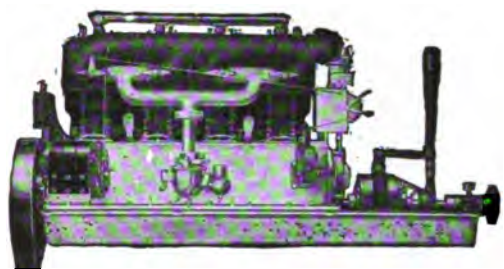
Our only suggestion is that a Scripps Motor is quiet, noiseless, and requires almost no attention. A turn of the wheel, a slight pull on the lever, and away we go, with nothing to watch but dim shores as they flit past in the moonlight.

There is the same satisfaction in owning a Scripps Motor that there is in owning a thoroughbred horse or dog. You know it comes from a good family strain that has never failed to show its true worth whenever put to a test.

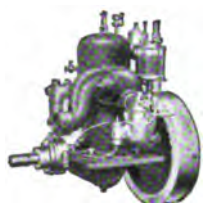
The way we build engines, the high class of material, the completeness and refinement of every detail, the record of Scripps Engines in service, all go to make the purchaser of a Scripps feel safe in his selection.

Our catalog shows how well and with what thoroughly conscientious skill Scripps Motors are built. We will gladly send you a copy on request.

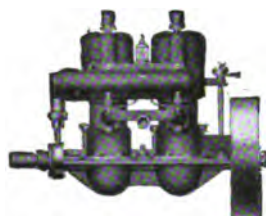
SCRIPPS MOTOR COMPANY, 612 Lincoln Ave., Detroit, Mich.



SCRIPPS MOTORS



3 1/2-H.P. Fox Special



14-H.P. Fox Heavy-Duty Motor

LOOK at these illustrations of FOX MOTORS

The 3 1/2-H.P. is suitable for boats under 22 ft. long, and any time within 90 days after purchasing we will allow you full price paid in exchange if you want more power.

The 14-H.P. is the motor a fisherman needs either in the single cylinder size or larger. It is built for commercial boats of all classes.

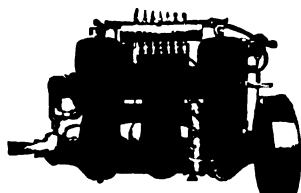
The 21-H.P. shows only one of 9 sizes equipped with the famous FOX FOURTH PORT—"the fuel saver."

The 24 to 36-H.P. FOX DE LUXE gives maximum power for minimum weight. Six sizes with the FOX FOURTH PORT.

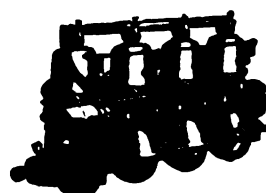
Fox Motors hold the world's endurance record
We build 22 sizes

Write for Catalog and Prices

All Fox Motors are sold on a MONEY-BACK Guarantee



21-H.P. Fox Medium-Duty Motor

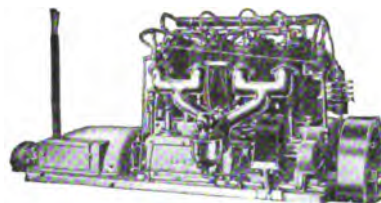


24-H.P. Fox de Luxe

THE DEAN MFG. CO., 209 FRONT STREET, NEWPORT, KY.

THERE'S POWER TO SPARE IN THE LOEW VICTOR MARINE ENGINE

A live marine engine that will generate from 24 to 40 horsepower when you need it—that's the Loew Victor Regular. Built for cruisers up to 40 feet and operating at medium speed. A compact, rugged power plant made with the same accuracy as the finest automobile motor—this engine will travel at 1,000 R. P. M. all day long, at which speed it develops 40 H.P.



LOEW VICTOR 4-CYLINDER REGULAR

Furnished complete as illustrated—two separate systems of ignition, operating on two separate sets of spark plugs and deriving current from two separate sources. Battery and magneto, reverse gear, carburetor, automatic oiling system and air compressor, are included. The engine is furnished with this regular equipment only—no changes made.

Type of Engine—4-cycle; all cylinders, "T" head type, with valves on opposite sides; water-jacketed manifold; die cast white bronze bearings; oiling system, automatic; the reverse gear furnished is of our own manufacture; plunger type water circulating pump; crank shafts on all regular machines have main bearings between each cylinder.

A VERY COMPLETE CATALOG SENT FREE ON REQUEST

This booklet is illustrated profusely and contains much valuable engine information. Send for it now, whether you are expecting to buy an engine now or some time in the future.

THE LOEW MANUFACTURING COMPANY

9178 Madison Avenue, Cleveland, O.

ALLAN W. FULTON & CO., 514 E. Pratt St., Baltimore, Md.

WALLACE BROS., Norfolk, Va.

HARRY D. GATES, c.o. Fairfield Auto Co., Bridgeport, Conn.

CARMAN & BOWES, Bourse Bldg., Phila., Pa.

C. FRANK MOORE, 220 Devonshire St., Boston, Mass.

BOWLER, HOLMES and HECKER CO., 141 Liberty St., N. Y. City.

SCOUT SERVICE

The Echo River, designed for scout service along the Ohio River and its tributaries, has just been put in commission. This boat was built by the United States Government, and measures 40 ft. over all. The Echo River is a glass cabin cruiser, and is equipped with a 60-h.p. T. & M. engine, which drives the boat from 16 to 18 miles per hour. The boat will be used by the Government for the inspection of interior waterways, particularly Green and Barren Rivers, and has accommodations for four persons. Her final test was a trial trip of 399 miles to Mammoth Cave, Ky., and return and the average speed was a little better than 16 miles an hour, with the surprisingly low gasoline consumption of only 62-100 gallons to the mile.

* * *

SCRIPPS ENGINES IN FOREIGN FIELDS

In a recent letter to the Scripps Motor Company of Detroit, Mich., their Finland agent writes as follows: "There will be a big regatta in Helsingfors in the Summer, and there will be entered five new elegant 35-37-ft. boats, with 18-30-h.p., one new 40-footer with 25-30-h.p., and two or three smaller ones, all with Scripps engines. These eight or nine boats will tell a tale. Some of them will also travel to Stockholm." From this it will appear that Scripps engines are very popular in foreign countries; in fact, we understand that a very large percentage of the engine manufactured each year by the Scripps Company are for export trade. It can be truthfully said that these engines will be found in every quarter of the globe, especially in Finland, Russia, Germany, South America, Australia, New Zealand and the Philippine Islands. In Russia, perhaps, they have scored one of their greatest victories, capturing the Silver Medal at the late St. Petersburg Exposition, in competition with thirty-seven of the world's greatest manufacturers of marine engines. Foreign buyers have the reputation of being rather skeptical and wary of making many purchases, until they are fully satisfied as to the quality of the goods they are buying, and in view of this fact it can hardly be denied that the Scripps Company have just cause for their enthusiasm about their product.

* * *

KRICE CARBURETER

The Krice Carburetor Company of Detroit, Mich., desire to hang out their doctor's shingle in Quarter-Deck columns. Springtime, with the opening of the boat season, is a good time of the year to remedy carburetor troubles, and the Krice Company offers a proposition to those who are interested that insures a cure, or no money. If a thirty days' trial of a Krice carburetor on an afflicted motor does not bring satisfactory results the Krice Company extends the privilege of its return and the purchase price of the carburetor being refunded. Mr. Oscar Krice, who is the designer of the carburetor bearing his name, and who is mechanical supervisor of the Krice Carburetor Company, has for several years back devoted his time and energy to the development of a carbureting device that would give universal satisfaction in its application to all kinds of gasoline engines. His efforts have been entirely successful for the Krice carburetor in its sales and widespread use for more than a year has proved his claims for it. The principal distinguishing feature of his carburetor is that he employs an annular spray instead of a solid jet spray. This, for one thing, accomplishes a method of quickly converting gasoline into gas, not only giving instantaneous response to the carburetor's throttle, but also making the least amount of gasoline go the longest way in the production of economical power. Those who are at all interested will do well to write the Krice Carburetor Company of Detroit for one of their descriptive circulars, which contains a plain talk with comprehensive illustrations and drawings, showing just how the carburetor is designed and operates. The Krice Company aim to have a carburetor that won't interrupt the power-boating fun, for once adjusted it is always adjusted.

* * *

COAST GUARD BOAT SANTA ROSA

The Costa Rican Government coast guard boat Santa Rosa, narrowly escaped becoming a total wreck on her last trip to Colorado Bar from Port Limon, Costa Rica. A huge wave threw her on a sand bar, and but for the experienced

hand of her American skipper, Captain Edward Case, she would have been battered to pieces in short order. Her engines never faltered, however, and Captain Case finally succeeded in backing off the bar and reaching port. Santa Rosa is equipped with two 36-h.p. Wolverine engines, and has been in operation for over six years. At the time of her delivery to the Costa Rican Government she made the run under her own power from New York to Port Limon, and during the last stage of the trip was underway continuously for 150 hours, without once stopping the engines.

* * *

DURKEE 1911 CATALOG

C. D. Durkee & Co. of 2 South Street, New York City, have just received from the press of Thomson & Co., the well-known printers of Marine Catalogs, their new 1911 catalog, which surpasses in size all former editions issued by this firm, and is in fact the largest Marine Catalog ever published by any one in the trade. There are over 800 pages, all heavily illustrated, and containing practically everything in hardware used on a yacht or power boat. Various flags are shown, as well as the international code, in colors. Years ago the house of Durkee issued the first catalog ever printed covering power-boat fittings, and to-day their catalog is used as a standard by the trade, as it covers everything used by power-boat men, as well as many specials that are only found in the Durkee line. It is without question the most valuable addition as a guide and reference book of power-boat fittings that has been published up to date, as it fully describes the best goods obtainable in the market.

* * *

BR'ER FOX

The Ohio River choked with driftwood, and a strong head wind that interfered materially with the boat's progress, were two elements that conspired against the success of Br'er Fox III, in an attempt by this boat to break the record between Cincinnati and Louisville, Ky. The distance between these two points is 132½ miles, and the record for a non-stop run of this character is held by Br'er Fox II, a sister boat of the present contender, which made the splendid average of 26.78 miles per hour on a non-stop run. Br'er Fox III measures 22 ft. long by 4 ft. 1 in. beam, the total weight being 500 lb. Her motive power consists of a 6-cylinder, 4¼ by 4¼ Fox De Luxe, 90-100-h.p. engine, weighing only 450 lb. and developing as high as 1,600 r.p.m. This particular engine was built for Mr. A. R. Silverston of Milwaukee, Wis., for use in an aeroplane. The start was made April 15 at 9:15 a. m., and at various times in the first few miles the boat was compelled to slow down on account of the driftwood and strong wind. When three miles above Warsaw, Ky., a particularly large amount of drift was encountered, and the propeller shaft was badly twisted, completely disabling the boat, leaving her helpless in the heavy sea that was running. Her crew's plight was seen from the shore, however, and a boat was sent to their assistance just as the little craft was about to capsize. Dr. Harry P. Butler, of Newport, Ky., was at the wheel of Br'er Fox III with Arthur Rose of the Dean Manufacturing Company acting as engineer. The total distance covered was 55 miles and the elapsed time was 1 hour 39 minutes, or at the rate of 33¼ miles per hour. All records for the same distance were beaten, and when it is remembered that 500 lb of gasoline were carried at the start, it can readily be seen that with the lightening of this load by consumption, the speed of the boat would have been increased materially in the latter stages of the journey. This fact, coupled with the weather conditions and the driftwood, makes the performance of this little craft all the more remarkable. The boat will be shipped back to Cincinnati, and another attempt to complete the run will be made in the near future.

* * *

NEW CATALOG

The Penna. Iron Works Company of Eddystone, Pa., have recently issued a new catalog that is of unusual interest to boat owners. They show a very complete line of the engines they build, and numerous illustrations of boats in which their engines have been installed. This concern is one of the oldest in the business, and makes one of the most reliable engines built in America. To any one interested they will gladly send a copy of their latest catalog.



Bosch Magnetos

Considered incomparable by those who have used them and know.

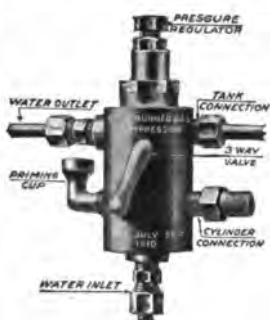
Specify "Bosch" when you buy.

BOSCH MAGNETO COMPANY

223-225 West 46th St., New York
CHICAGO DETROIT SAN FRANCISCO

The Gray Whistle Outfit

A NEVER FAILING SIGNAL



The **Gray Automatic Compressor** maintains a steady pressure in tank and requires no attention. It is attached to the priming cup opening with a steel nipple, and engine may be primed through compressor. The **Gray Autochime** whistle requires but little pressure and has a deep, rich, beautiful tone with

which no other whistle can compare. Our valves are specially made and do not leak. Each and every part of the outfit is the best obtainable. If not sold by your dealer, write us for catalog No. 15. It describes outfits ranging from \$5 to \$50. Fog Bells, Gasolene Filters, Spark and Throttle Controls and Special Fittings.

GRAY-HAWLEY MFG. CO.

943 E. Jefferson Ave.

DETROIT

Perfex

LIGHT



Model "A." Price, \$20.00

IGNITION

ELECTRIC GOODS MFG. CO.
LAKE AVENUE CANTON, MASS.

Magneto

Bei Bestellungen beziehen Sie sich bitte auf THE RUDDER

THE BRUSHMARINE

3-5 H.P.



This is the Marine type of the Brush Balanced, Single-Cylinder Motor used in the Brush Runabout, the little Auto that, like the original "one lugger" Cadillac, also designed by Mr. A. P. Brush, "Always runs and never wears out."

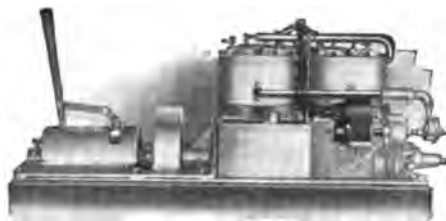
As little vibration as the ordinary two-cylinder engine. Materials and workmanship just about as good as they can be.

For Reliability, Economy and Durability, it has no rival, and the price is reasonable.

Suitable for hulls from 16 to 25 ft. long.

Oakland
20-32

The RIGHT Motor



COMPACT CLASSY
STRONGEST PULLING ENGINE
OF ITS INCHES IN THE WORLD

THE WILPEN CO.

Bates & Congress Sts.

DETROIT, MICH.

RACING EVENTS, 1911

In order that this list may be complete we would be pleased to receive from club secretaries and chairmen of race committees any correction or additions to the following schedule:

Saturday, June 3

Brooklyn Y. C.—Power-boat races.
Edgewood Y. C.—N. B. Ass'n power-boat races.
Bensonhurst Y. C.—Y. R. A. G. B. power-boat races.
N. Y. M. B. C.—Club races.
Bermuda Race—Boston to Bermuda.
Boston Y. C.—Y. R. A. M. B., City Point.
Mosquito Fleet Y. C.—Y. R. A. M. B., City Point.
Royal Can. Y. C.—14-ft. dinghy races.
Knickerbocker Y. C.—L. I. S. Y. R. A., annual regatta.
Jackson Park Y. C.—Club races.
Seawanhaka Cor. Y. C.—15 footers.
Bensonhurst Y. C.—Spring.
Edgewood Y. C.—Open.

Saturday and Sunday, June 3 and 4

South Coast Y. C.—Race around Catalina Id.

Sunday, June 4

City Id. Y. C.—Power-boat races.
South Coast Y. C.—

Saturday, June 10

Brooklyn Y. C.—Power-boat races
E. Greenwich Y. C.—N. B. A.
Del. River Club—Club races.
Atlantic Y. C.—Y. R. A. G. B.
Corinthian Y. C.—Y. R. A. M. B., club races.
Royal Can. Y. C.—Club regatta.
Detroit M. B. C.—Club races.
Manhasset Bay Y. C.—L. I. S. Y. R. A., annual Spring regatta.

Jackson Park Y. C.—Club races.
Seawanhaka Cor. Y. C.—15 footers, club races.
Quincy Y. C.—Club races.
Columbus Y. C.—Club races.

Sunday, June 11

Coos Bay M. B. C.—Cruise.

Sunday, June 11

South Coast Y. C.—Power-boat races.

Saturday, June 17

Brooklyn Y. C.—Power-boat races.
Rhode Id. Y. C.—N. B. A.
N. Y. C. C.—Y. R. A. G. B., championship race.
Motor Boat C. of Buf.—Club races.
Boston Y. C.—Y. R. A. M. B., Hull.
Royal Can. Y. C.—16-ft. dinghy races.
Larchmont Y. C.—L. I. S. Y. R. A., Spring regatta.
Roy. Ken. Y. C.—Club races.
Chelsea Y. C.—Club races.
Seawanhaka Cor. Y. C.—15 footers.

Sunday, June 18

Toledo Power Boat Club—Power-boat races.
City Id. Y. C.—Club races.

Tuesday, June 20

Fall River Y. C.—Cotton Carnival.

Thursday, June 22

New York Y. C.—Spring cups off Glen Cove.
Seawanhaka Cor. Y. C.—L. I. S. Y. R. A., special class (22d and 23rd).
Royal Ken. Y. C.—Club races.

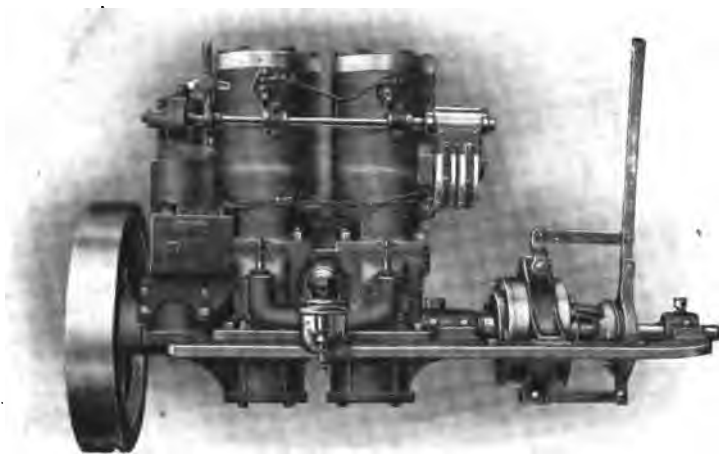
Friday, June 23

Seawanhaka Cor. Y. C.—Special.

Saturday, June 24

Brooklyn Y. C.—Power-boat races.
Bristol Y. C.—N. B. A.
Del. River Club—Club races.
Crescent A. C.—Y. R. A. G. B., championship race.
N. Y. M. B. C.—Tarrytown light race.
Detroit M. B. C.—Club races.
Corinthian Y. C.—Y. R. A. M. B., ocean races.
Roy. Can. Y. C.—Cruising race.
Seawanhaka Cor. Y. C.—L. I. S. Y. R. A., annual regatta.
N. Y. A. C.—L. I. S. Y. R. A., Block Island races. Sail and power, Day Cup.
Seawanhaka Cor. Y. C.—Annual.
Larchmont Y. C.—Inter-club class.
Columbia Y. C.—Club race.
Quincy Y. C.—Club races.
South Coast Y. C. (24-25)—Race around Santa Barbara Id.
Jackson Park Y. C.—Club race.
Roy. Ken. Y. C.—Annual race for Trask Cup.

(Continued on page 46)



MIANUS ENGINES

Built to Last a Lifetime

**Medium Weight
Moderate Speed
Plenty of Power**

Magneto Ignition, starting and running without batteries or spark coil.

Fourteen years in successful operation and now used extensively by the United States Government.

TWO FACTORIES AND TEN BRANCH STORES

Sizes, 3 H.P. to 30 H.P.

Each Engine Fully Guaranteed

THE MIANUS MOTOR WORKS

STAMFORD, CONN.

Two Factories

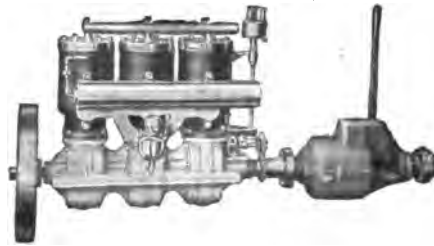
MIANUS, CONN.

10 BRANCH STORES

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4-cyl. "Featherweight" with Special Exhaust Manifold. 40 h.p. Weight 250 lbs. Price, \$1050



3-cyl. Type "C." 27 h.p. at 900 r.p.m. Weight 295 lbs.

Price, Aluminum Fittings \$535
Price, Iron Fittings 475
2-cyl. "C." 18-20 h.p. 300
4-cyl. "C." 675
Type "C" Engines 9 h.p. per cylinder at 900 r.p.m.
Light, high-speed engines for fast launches, and semi-speed boats. Made in one to four cylinders.



4-cyl. Type "B" 24-30 h.p. Weight 420 lbs. Price complete, \$675

Type "B" Engines. Speeds 450 to 800 r.p.m. for launches and small cruisers. Made in one to four cylinders, rated 6 to 30 h.p.

2-cyl. 12-15 h.p. \$300
3-cyl. 18-24 h.p. 475

THE MOTOR OF RELIABLE SERVICE

The **ELBRIDGE** name plate on an engine stands for the best mechanical construction, the best materials, the greatest power for weight and bulk, the greatest fuel economy and a power plant exactly suited to the hull in which you install it.

Give us the size, general outlines and purpose for which you wish to use your boat. We will tell you the type of motor best suited to your needs.

Our 1911 catalog is full of information valuable to all motor boat owners. Send for it

ELBRIDGE ENGINE CO., 27 Culver Road, Rochester, N. Y.

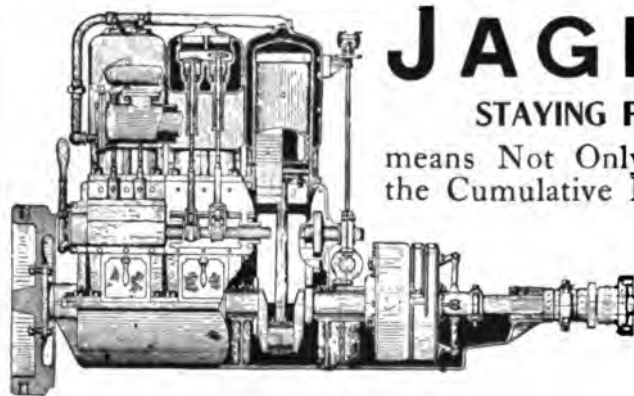
NEW YORK CITY—M. I. DOYLE CO.
PHILADELPHIA, PA.—CARMAN & BOWES
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LOS ANGELES—MARINE ENGINE & SUPPLY CO.
SAN FRANCISCO—CALIFORNIA AERO MFG. & SUPPLY CO.
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MARSHFIELD, OREGON—COLUMBIA BOAT & MACHINERY CO.
SACRAMENTO, CAL.—PARKOST BOAT SUPPLY CO.
RUTLAND, VT.—L. J. EGGLESTON



Type "A." 3-5 h.p. Weight .80 lbs. Price complete \$85



3-cyl. "Featherweight" with Racing Stacks. More than 30 h.p. guaranteed. Weight 200 lbs. Price, \$750



JAGER ENGINES

STAYING POWER CONCLUSIVELY DEMONSTRATED

means Not Only Thorough Design and Construction, but the Cumulative Improvement of Experience as well.

Jager Engines are built in 1 to 6-cylinder sizes, 4-cycle, 4 to 150 H.P. in Heavy-Duty Slow-Speed, Medium-Weight Medium-Speed, and Light-Weight High-Speed Types. Ask us about our Special Yacht Tender Engine, Light-Weight High-Speed 2-cylinder 2-Cycle 7 H.P. Also about Kerosene and heavier fuels than gasoline. Catalog on request.

CHAS. J. JAGER CO. 283 Franklin St., Boston, Mass.
33 Canal St., Providence, R. I.

ALUMINUM

The Quality Gas Engine

IRON

SMALLEY

GENERAL MACHINERY COMPANY

New York: 123 Liberty Street
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Boston: 38 Pearl Street
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2-CYCLE—ALL OPEN BASE

A DOZEN SUPERIOR FEATURES

Before placing your order for a gasoline motor it will pay you to look over our catalog.

VANGUARD ENGINE COMPANY

18 Tremont St., Boston, Mass., U. S. A.



New York Office, Hudson Terminal Bldg., 30 Church St., N. Y. City

The **J. W. Lathrop Co.** Mystic, Conn. **MARINE GASOLENE Engines**
Manufacturers of

Permanent Exhibition of Motors

An engine for every purpose. If you know what you require, we have it. If you are not certain, we can help you select. Heavy-Duty, Medium and High-Speed, Two-Cycle, Four-Cycle, Marine, Stationary, Aero, Electric Lighting, Pumping Outfits.

GASOLENE ENGINE EQUIPMENT CO. 133 Liberty St., New York

STA-RITE



Spark Plugs are *guaranteed forever*. We repair *Free* when sent prepaid with postage for return.

Price, \$1.00 postpaid

THE R. E. HARDY CO., (Inc. 1900)
1134 Austin Ave., cor. May Street

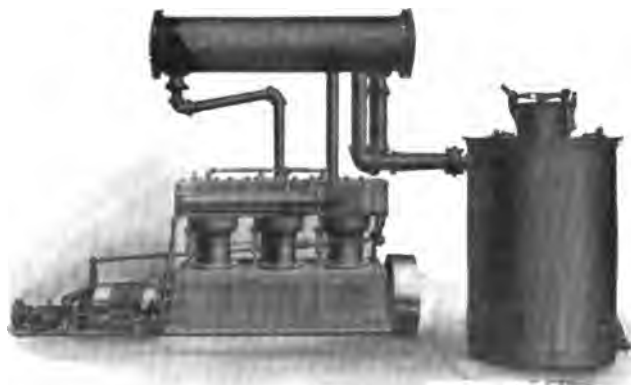
CHICAGO

Norwalk Brass Co.

**PROPELLERS
AIR PORTS**

**NORWALK,
CONN.**

Special Foundry and Machine Work



The cheapest and safest marine power. Operates on many of the good makes of four cycle gasoline engines at one-eighth the cost.

25 to 5,000 H.P. sizes

Our catalog tells you how to use and all about it.

WE GUARANTEE RESULTS

Marine Producer Gas Power Company

2 Rector Street, New York

Agents! Write to Us To-day!

High-speed, slow-speed, heavy-duty, power for racing, pleasure and work boats

Get the complete information about our new models of ECLIPSE MOTORS. This is a splendid opportunity to ally yourself with a firm which treats its agents "right" and sells a good engine. Perhaps the very territory where you live is waiting for a live, hustling, active man with sales ability and a desire to advance himself. Our new campaign for agents is bringing dollars and dollars into the pockets of men who are far-sighted enough to realize the value of our offer.

The Eclipse Special is a **very superior** motor—a motor of handsome finish and unexcelled workmanship—a beautiful piece of expert mechanical work—quiet running as the fall of night—fully guaranteed—simple—practical—a joy to the owner.

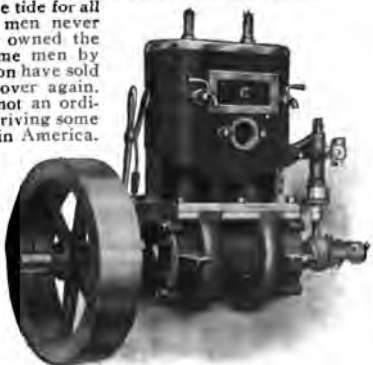
THE ECLIPSE NEVER FALTERS

It runs as steady as the tide for all sorts of owners. Many men never saw engines before they owned the "ECLIPSE." These same men by their praise and satisfaction have sold engines for us over and over again. The ECLIPSE ENGINE is not an ordinary engine. It is found driving some of the finest water craft in America. Poor men and wealthy boat owners both attest the marvelous simplicity and splendid running qualities of this engine, which is shipped with a maker's iron-clad guarantee that the quality under the fine enamel finish is absolutely first-class.

Built in seven sizes—from 1 to 10 h.p. both single and double cylinders.

Our catalog "B" is handsome and gives interesting engine information. We will mail it free on request if you send to-day.

ECLIPSE MOTOR COMPANY 536 Kalamazoo Avenue
Traverse City, Mich.



He's Making His "Get-a-Way"

A Simple Engine with a Big Power Delivery

because there's reserve power—plenty—every stroke even and true—every ounce of power possible is exerted on the propeller shaft. For racing—for cruising—for fishing—for ferries—for park use, for excursion boats, for every such use the Doman is the safe, simple, easy-to-handle motor.

The DOMAN
MARINE MOTOR

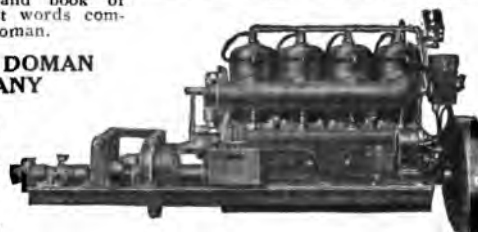
Medium Weight
Marine Motors
5 H.P. to 75 H.P.

are built in sizes from 2-cylinder, 5 H.P. to 6-cylinder, 75 H.P. All parts easily accessible. Each motor completely equipped with shaft and propeller and tested before leaving factory. Send for free complete catalog and book of owner's earnest words commending the Doman.

THE H. C. DOMAN COMPANY

Dept. E
Oakhurst, Wis.
U. S. A.

"Why a Doman?
Ask an Owner"



"J & B"

Magnetos and Coils

Manufactured by

JACOBSON-BRANDOW COMPANY

PITTSFIELD, MASS.

Western Sales Office, 412 BOWLES BLDG., DETROIT, MICH.

Canadian Representative, JOHN FORTAN, MONTREAL

NEW YORK SALES OFFICE, 116 NASSAU ST.

WIZARD MAGNETOS

Mean Quality

Specify a Wizard Magneto when you buy your boat and know that your ignition will be reliable. Adopted by the leading manufacturers as standard equipment after thorough tests. Make-and-break or jump-spark—belt or friction governor.

Write for Catalog R.

HERCULES ELECTRIC COMPANY

Indianapolis, Indiana

U. S. A.



NO MATTER how classy the "lines" of your hull, it is the motor that drives the boat and upon its competency depends your boating success. Judge carefully the individual merits of all standard makes of motors, compare the WAYNE against the "field" and the WAYNE will eventually go into your boat.

SEND FOR WAYNE CATALOG

The University of Michigan have tested and tried the WAYNE MOTOR in the most severe service and this Institution has only the highest endorsement. The WAYNE is the result of sixteen years of engine evolution. A motor that is non-vibrating; that has only one-third the moving parts of the ordinary motor; that is designed for concentrated energy; that contains the highest grade materials and workmanship—that's the WAYNE—the motor for YOU.

The WAYNE is built in one and two cylinder and is rated at four and eight horsepower respectively. Don't fail to send for our beautiful 1911 Marine Catalog to-day.

THE WAYNE MOTOR COMPANY

262 JEFFERSON AVE.

DETROIT

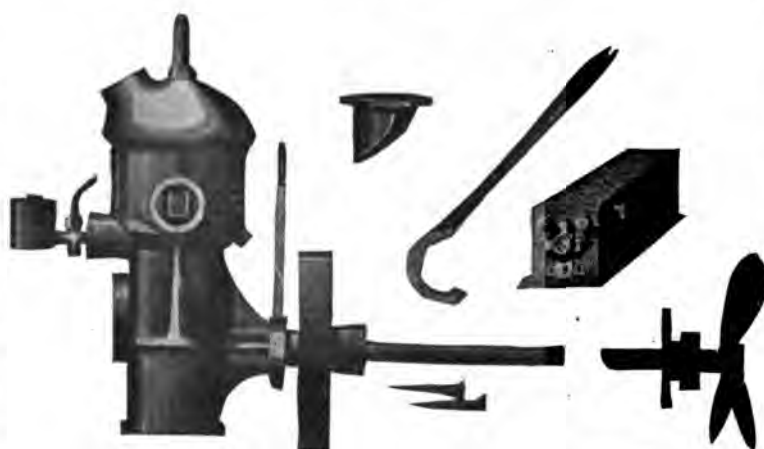


1-Cyl. Motor
4-inch Bore, 4-inch Stroke
4-H.P.

1 $\frac{1}{4}$ h.p.

Complete

\$25^{.00}



Owners of Large Craft:

Here is a little engine that will transform your dinghy into a power proposition and still be practical. Boatmen in general! How can you afford the exertion of rowing with a little engine like the **Arrow Junior** which you can get by fast freight (or express). This little marvel only weighs 35 lbs. and develops power up to 1 $\frac{1}{2}$ h.p. Complete equipment with each one. **READ** what we send: rear starter, timer, underwater exhaust fitting, float-feed carburetor for gasoline, kerosene, alcohol, distillate, naphtha, benzine, etc., spark coil, spark plug, battery, wire, commutator, ball thrust, lubricating system, 5-ft. propeller shaft, stuffing box, 3-bucket 10-inch diameter propeller. A complete outfit all ready to set in the boat. Salt-water fittings \$3.50 extra. We guarantee that the engine will be free from defect in material or workmanship for five years from date of sale. If in that time a part breaks because of such defect we will duplicate it free at our engine works.

We Sell Direct

Saving You The Agent's Profit

The difference in the price of the **ARROW JUNIOR** and what others charge is the agent's commission. The quality is there. The running ability, the power, all speak for themselves. Owners and prospective owners read our "M" booklet, which tells more. This little engine stands eight inches above the engine bed, and can be used for all sorts of work, such as running a lighting dynamo, a power whistle, a bilge pump, or take it to the home, shop, farm and with it operate sewing machine, cream separator, washing machine, grindstone, wringer, drill press, churn, printing press, etc. Governors and pulley for stationary work only \$5.00 extra.

Uses kerosene oil to save all this labor. The greatest power proposition in years and you can get it with only a small legitimate manufacturing profit to the maker and the full five-years' guarantee from the engine works. It has power enough for a 16-foot motor boat and would bring a sailing craft in if the wind failed. **OR, IF YOU WISH**, put it in a "dink" or canoe and leave your oars and paddle on shore. Reliable, powerful and easy to master. Two-stroke type, no valves, three moving parts covered by film of oil. 1-in. diam. crank-shaft, removable bronze bearings throughout. How can we do it for the price? Let the little engine convince you of its merits. Other sizes at proportionate prices up to nine cylinders, ninety h.p.

APPLICATION COUPON

ARROW ENGINE WORKS, Detroit, Mich.

Please send me a _____ h.p. Arrow Engine by fast freight (express). I enclose \$_____ to show good faith and agree to pay balance after examining the engine at transportation company's warehouse.

Name _____

Address _____

ARROW ENGINE WORKS

200 Boydell Bldg., Detroit, Mich., U. S. A.

Var god aberopa The Rudder nar anonosorerna tiuskrifvas

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What Experience has taught us regarding Motor Lubricants

The gas engine is comparatively new.

During its experimental stages, ordinary steam cylinder oil was used. It left so heavy a carbon deposit in the cylinders that the engine would quickly clog up and stop.

This retarded the development of the gas engine and presented a new lubricating problem.

It was plain that an efficient gas engine lubricant must leave no carbon deposit.

Lubricating oils that largely overcame this difficulty were then produced. This permitted a rapid development of the gas engine.

Finally, however, after exhaustive practical tests, we succeeded in further eliminating from lubricating oil the carbon-forming elements.

The result is an oil that we believe to be the best gas engine lubricant yet produced.

Polarine

POLARINE OIL has set a new standard in motor lubricants.

Its consistency is not materially affected by heat or cold.

It flows freely down to the zero point.

Properly used, it will reduce repair bills and prevent breakdowns.

The Polarine Brand covers: POLARINE OIL, sold in sealed cans, gallon and five gallon sizes, or in half-barrels and barrels.

POLARINE TRANSMISSION LUBRICANTS prepared in three consistencies, to suit different types of construc-

tion; put up in cans of convenient size, also in barrels and half-barrels.

POLARINE FIBRE GREASE AND POLARINE CUP GREASE, sold in round cans, the latter for use in cups, the former of high melting point, especially adapted to use on universal joints.

All dealers sell Polarine Lubricants, or can get them for you.

If you use any kind of gas engine send for our booklet, "Polarine Pointers." It includes hints on lubrication and the causes of motor troubles. Write our nearest agency.

Standard Oil Company
(Incorporated)

YOU can't get reliable work from the most reliable workman if his tools are unreliable.

Even with the most reliable machine tools your service is still unreliable if the gas engine operating the tools is unreliable. Even with the most efficient and reliable gas engine, you *still* don't get reliability unless the battery can be depended upon to deliver the spark with unfailing accuracy.

With all these important things depending on the reliability of the battery, it is poor economy to purchase any but the very best battery in consideration of a slight difference in first cost.

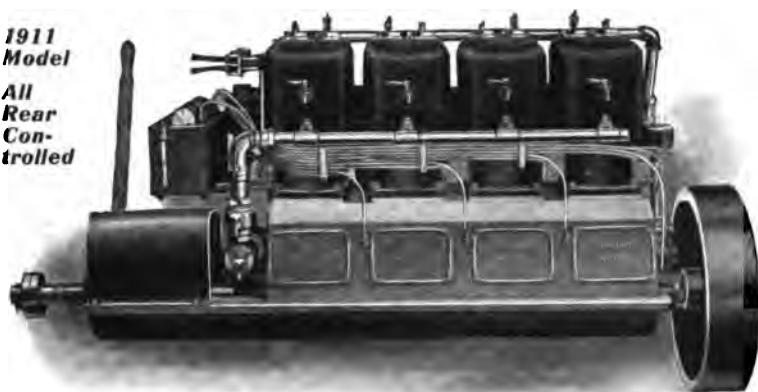
EDISON BSCO PRIMARY BATTERY

It is true that the Edison BSCO Primary Battery costs more than some other batteries — *first*. But its individual assembled-in-one construction, high quality of materials used and the rigid inspection which every Edison BSCO undergoes, results in a degree of reliability that is worth far more than the slight difference in first cost. Besides, its economy of operation and maintenance and the fact that renewals cost less than in any other batteries makes it, in the end, by far the *least expensive* battery to use for gas engine ignition.

Our booklet gives full particulars
Write for it to-day

THOMAS A. EDISON, Inc.
18 Lakeside Ave. Orange, N. J.

1911
Model
All
Rear
Con-
trolled



MISSOURI Launch Engines "Make Good"

They **start** right, **run** right, and **STAY** right. Last for years, give no trouble, and cost less for fuel than any other.

**DO YOU WANT TO SAVE
TIME, TROUBLE AND MONEY?**

Then let me "**show you**" how **MISSOURI** engines have saved it for others and will save it **FOR YOU**.

It's the engine's ability to stand the pace, for heavy, hard work, day in and day out, year after year, that has made it so popular with the users.

"Ask the **USER**, he **KNOWS**"

H. LIPPERT, 2911 N. 11th St., St. Louis, Mo.

Send for free booklet of letters from users and 1911 Catalog

The Durkee Auto Steerer

gives complete control of your boat at all speeds.

Our latest Auto Steerer is far ahead of all others and has to be seen to be appreciated

No matter what you want in boat equipment we can supply it.

Many new specials this year.

C. D. DURKEE & CO.

2 SOUTH STREET

NEW YORK

Rudder How-to Series

How to Build

a small 22-foot

Cruising Power Boat

(Sardine)

Selected from the many How-to articles published in The Rudder

Price 10 cents

THE RUDDER PUBLISHING CO.

1 Hudson Street

New York

The Gordon Reversing and Feathering Propeller



MECHANISM SIMPLE. STRONG. SERVICEABLE

OUR friends have told us of sixteen advantages of the Gordon Wheel over all others. Users claim absolute control at all times; experts say its durability commends it; Engine builders acknowledge its efficiency. Where others are weak—we excel. The hub is scientific and strong—no openings to become clogged—no screws to work loose. All possible position for blades.

THE GORDON PROPELLER COMPANY

9004 Desmond Avenue
Cleveland, Ohio

En répondant aux annonces veuillez mentionner THE RUDDER



"The Engine of Constant Service"

THIS picture shows what a 54-h.p. BUFFALO heavy-duty engine will do, and *is* doing. The tug "Vixen" is owned by M. C. Hutto, Jacksonville, Fla. He says:

"The work that I am doing other people claim, cannot be done with a gasolene engine, but can only be done with a steam engine, but the 54-H.P. 'BUFFALO' is doing the work and giving perfect satisfaction, and I'll put her up against a steam engine any day. The engine has not cost me five cents for repairs, and it is in as good condition as new."

The record of one BUFFALO engine may not prove much, but the praise of thousands of satisfied users of BUFFALOS in pleasure boats, speed boats and work boats *does*. Ask them.

Twenty-three
Models; 2
to 225 H.P.

BUFFALO GASOLENE MOTOR CO.

Regular
Heavy-Duty
High-Speed

1211-23 NIAGARA STREET, BUFFALO, N. Y.

Ejector Muffler. Silent—Efficient—Successful



No Noise, No Loss of Power. Water Cooled. Strong Construction. Easily Installed. No Odor. An Invention, Not an Old Device with a New Name.

Is Not the Successor of Any Other Silencing Device, But Supercedes All Others.

If every engine builder had to pay for the fuel used with the engines of his manufacture, every engine would be equipped with an Ejector Muffler. Demand that one is included with your equipment.

For particulars and catalog write to the nearest distributor or

MOTOR & MANUFACTURING WORKS COMPANY, GENEVA, N. Y.
DISTRIBUTORS: Atlantic Maritime Co., 210 State St., Boston, Mass. Hy. Keidel & Co. 405 W. German St., Baltimore, Md. E. J. Willis Co., 85 Chambers St., New York, N. Y.

SHAW PATENTED PROPELLER

Guarantees greater speed than any other wheel, with less number of revolutions.

No cavitation under any speed.

Will keep boat on even keel while running, and no vibration of engine.

WRITE FOR INFORMATION

P. O. Box 3224

BOSTON, MASS.



Three-Cylinder Motor

We have here in our **KNOX** a Marine and Stationary Motor that will operate successfully in all Climates on Gasolene, Kerosene, Alcohol or Distillate

No superheating chambers used—simply our Model "D" Carburetor that anyone can operate on all fluids. A RELIABLE and DURABLE Motor, designed for the Cruising Launch and the Commercial Boat.

Made in sizes from 3 H.P. to 40 H.P.—two and four cycle. Do not buy before investigating the merits of our Knox. It has stood the test, this being the 12th year of successful operation.

Our MODEL "D" CARBURETOR can be attached to any Motor. We sell it separate from our KNOX Motor. Equal to any Carburetor made for gasolene, and the ONLY CARBURETOR made that will operate any Motor successfully on all fluids. Simple to attach—easy to operate.

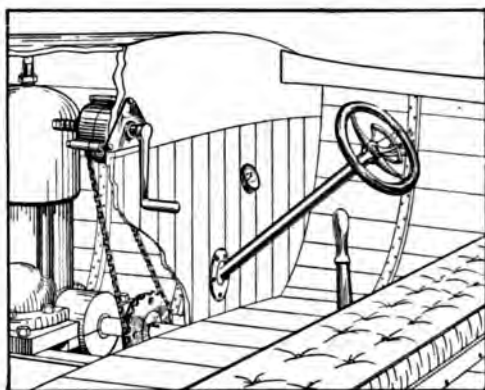
The quality of gasolene is growing inferior every year.

With our Model "D" Carburetor the lower grade of gasolene is made to equal the highest.

Our Catalog describing our Knox Motors and our circular describing our Model "D" Carburetor mailed upon request.

Camden-Anchor-Rockland Machine Co., Camden, Me., U.S.A.

Ble Bestellungen beziehen Sie sich bitte auf THE RUDDER



SAFETY A BOON TO MOTOR-BOAT OWNERS

The Star Safety Rear Starter is guaranteed to remove every possibility of injury or damage from cranking the engine.

The price is moderate and you cannot afford to take the chance of starting your engine in the present clumsy old-fashioned way.

Write to us at once for full particulars

The Star Starter Co. General Offices
170 BROADWAY, N. Y.

N. Y. Salesroom, 1680 Broadway

Another Durkee Specialty THE SEAPROOF BOAT SWITCH

Price
\$1.25
Each



WATERPROOF

NON-CORROSIVE

Patented December, 1910

The "Seaproof" Boat Switch is the only **absolutely** waterproof switch that has ever been offered to the motor-boating public. Its design and construction throughout is such that we have no hesitancy in saying that it will

Outlast many of the Ordinary Kind.

C. D. DURKEE & CO., 2 South St., New York

"CHAMPION" EQUIPMENTS



This shows our second size. There are six others, one smaller and four larger. We have one to suit your boat. Ten years' experience has enabled us to get them right. Shall we send you our Bulletin "M"? **HECTOR MacRAE** 316 St. Paul St. **BALTIMORE, MD.**

Make Up Your Mind This Season To Get Full Value Out of Your Boat



THE DAYTON LAUNCH LIGHTING SYSTEM will do the trick. It will enable you to run at night when you want to—take extended cruises—to enjoy your cabin in heavy weather, and in the evening—in short, just double the pleasure your boat gives you.

Now is the time to get ready for the coming season, and equip your boat with electric light.

With a Dayton Launch Lighting Outfit you can ride safely at all times. You can have bow and riding lights that **never blow out**, a searchlight to pick out your course, and to make landings, and cabin lights that make the inside of your boat as bright as day in a moment's notice.

No matches, no oil, nothing dangerous. Just turn a switch and the light is there.

Oil lights smell, are always a source of danger and make trouble and delay when you can't afford delay.

Don't think that Dayton Lighting Systems are expensive. They are actually cheaper than other lights in the long run. After the first investment they cost almost nothing.

Write for bulletin describing Dayton Outfit which will operate high voltage 1500-c.p. arc searchlight and also low voltage interior lights.

The Dayton Electrical Mfg. Co. 96 ST. CLAIR STREET
DAYTON, OHIO

*Largest Manufacturers of Ignition and Lighting Apparatus
Exclusively in the World*

EVERY BOAT LOVER

should have our
Valuable Little Booklet

"PROPELLERS
IN A NUTSHELL"



"THE WHEELS THAT WIN"

COLUMBIAN SPEED PROPELLERS

USED BY THE BIGGEST CHAMPIONS OF AMERICA

Made by Columbian Brass Foundry, at 650 Atlantic Av., Freeport, L. I., N. Y. Nearest to New York.
Best point for foreign shipments.

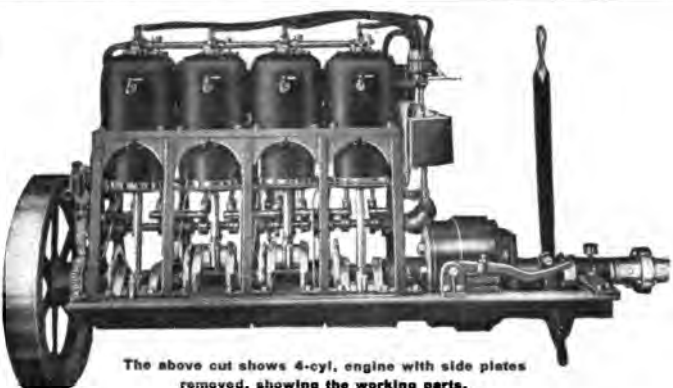
NEW YORK CITY LOCAL SALESROOM, 133 LIBERTY STREET

THE CHAMPION
SPEED WHEELS OF AMERICA
"A Wheel for Every Boat"

Made of our famous
MANGANESE BRONZE
ALL KINDS, SIZES AND PITCHES

Hagan el favor mencionar el RUDDER cuando escriven

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Campbell Marine 4-Cycle Gasoline Motors

1 to 6 cylinders, 5 to 60 H. P.

Pleasure and Heavy-Duty Service

They are compact, simple and absolutely dependable—Exceptional in durability and economy of operation. Its ease of access to all the working parts, and quick response has placed the "Campbell" in the confidence of the best trade.

"Always specify *Campbell* engines when ordering your boat."

Write for catalog and prices—Mailed free upon request.

CAMPBELL MOTOR CO., 704 Lake St., Wayzata, Minn.

DISTRIBUTORS: { New York, Bruns Kimball Co., 134 Liberty St.
Portland, Ore., Rober Machinery Co., 281 E. Morrison St.

The above cut shows 4-cyl. engine with side plates removed, showing the working parts.

Make any rowboat a power boat in a minute

Any rowboat can be made an efficient power boat by simply clamping to the stern an Evinrude Rowboat Motor. Fits any shape boat or stern. No brackets or alterations to boat necessary. Speed as high as 7 miles an hour. Not affected by waves, spray or weeds.

Evinrude Detachable Rowboat Motor

Does away with the tiresome rowing. It is simple, compact, light and smooth running. All fishermen, outers, vacationists, and hunters should have one. Engine and gasoline tank weigh about 32 lbs. and can be carried like a suit case. Catalog with illustrations and descriptions of this marvelous motor FREE.

Write Agents wanted
Evinrude Motor Company, 217 Reed St., Milwaukee, Wis.
Walter Coleman & Sons, Rhode Island Representatives, Providence, R. I.
Melchior, Armstrong & Dessau, 116 Broad St., N. Y. City. Exclusive Foreign Agts.



SINTZ REVERSING SPEED WHEEL



The only wheel on the market that will give you the three things desired—**Speed, Strength and Control.**

We have a wheel for every Boat, Canoe, Tug, Cruiser or Racing Boat.

Write for Free Catalog

EASTERN MOTOR SALES CO.
1680 Broadway
Eastern Agent

WILMARTH & NORMAN CO., 608 Canal Street, Grand Rapids, Mich.

Frontier Propeller

Guaranteed to increase the speed of your Boat to from one to three miles an hour

FRONTIER ENGINEERING CO., 822 Fort St. W., Detroit, Mich.



The

Harthan Propeller

HAS NO SUPERIOR for both speed and cruiser work

SEND FOR PARTICULARS

McFarland Foundry & Machine Co.,
TRENTON, N. J., U. S. A.



REVERSIBLE PROPELLERS

Patented

Strong as a solid wheel. Easily operated. Interchangeable blades of accurate pitch. 100-H.P. at 300 R. P. M. successfully operated.

H. J. LEIGHTON **Syracuse, N. Y.**

Lighter than possible with any reverse gear

THE PALM BEACH GRAND PRIZE RACE, March 17th, 1911, for

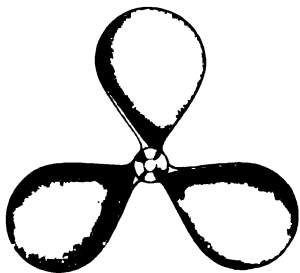
\$2,500.00 in Gold

The most important Motor Boat Race held in this country, was won by the T and S equipped with a

Hyde Turbine Type Propeller

Turned by a 100-H.P. Sterling Engine
"Be wise and buy a HYDE"

Manufactured by **HYDE WINDLASS COMPANY** **BATH, MAINE**



HOW TO BUY ROPE

This is a title of a Booklet which we will be glad to send you. It is not very big—in fact, will only take a few minutes to read; still it will show you a few things to watch when buying rope.

If you have a Yacht or Motor Boat, you ought to know about COLUMBIAN YACHT ROPE. There is a booklet printed called, "The Rope for Yachts and Motor Boats." You may have a copy by simply asking us.

COLUMBIAN is the standard Manila Rope. It is known wherever rope is bought or sold. Always ask for it.

COLUMBIAN ROPE COMPANY

MANUFACTURERS OF

Rope and Commercial Twines

FROM MANILA, SISAL,
JUTE, HEMP and FLAX

1117-1159 Genesee St., Auburn, N. Y.

New York Office
62 SOUTH STREET

Chicago Office
6-8 RIVER STREET

RACING EVENTS, 1911—Continued

Thursday, June 29

Ind. Hbr. Y. C.—L. I. S. Y. R. A., race to New London.

Friday, June 30

Eastern Y. C.—Race to New London.

L. S. S. A.—Regatta at Toronto.

Saturday, July 1

L. S. S. A.—Regatta at Toronto.

Brooklyn Y. C.—Power-boat races.

Brooklyn Y. C.—Cape May, sail and power.

Washington Park Y. C.—N. B. A.

Chatham Y. C.—Club race.

Atlantic Y. C.—Y. R. A. G. B., championship race.

N. Y. M. B. C.—Albany race.

Detroit M. B. C.—Club cruise.

Cottage Park Y. C.—Y. R. A. M. B., Winthrop.

Eastern Y. C.—Y. R. A. M. B., special race.

California Y. C.—Club races.

Roy. Can. Y. C.—Special races for schooners, also Queens Cup Race.

Seawanhaka Cor. Y. C.—L. I. S. Y. R. A., race from New London.

New Rochelle Y. C.—L. I. S. Y. R. A., annual ocean race. for the Brooklyn Y. C. Cup.

South Coast Y. C. (1-2-3-4)—Cruise to Avalon.

Roy. Ken. Y. C.—Power-boat races.

Harvard-Yale Cruising Race, New London-Oyster Bay.

Eastern Y. C.—New London-Marblehead.

Monday, July 3

Amer. Y. C.—L. I. S. Y. R. A., annual regatta.

Tuesday, July 4

Edgewood Y. C.—N. B. Ass'n.

Boston Y. C.—Marblehead.

Del. Riv. Club—Power-boat races.

Milford Y. C.—Open races.

Byram River Y. C.—Officers' Cup Race.

Bensonhurst Y. C.—Y. R. A. G. B., open.

Motor B. C. of Buf.—Inter-club races.

Fall River Y. C.—Tiverton.

City of Boston—Open race City Point.

Seawanhaka Cor. Y. C.—15 footers.

Chelsea Y. C.—Club races.

Eastern Y. C.—Y. R. A. M. B., annual regatta.

Corinthian Y. C.—Y. R. A. M. B., Marblehead open races.

Larchmont Y. C.—L. I. S. Y. R. A., annual regatta.

Hartford Y. C.—L. I. S. Y. R. A., annual regatta.

Taunton Y. C.—Power-boat races.

City Id. Y. C.—Open race for Kirchoff Trophy.

City Id. Y. C.—Club and open races.

Corinthian Y. C. (Balto.)—Cruising race.

Thursday, July 6

New York Y. C.—Sound cups off Huntington Bay.

Quincy Y. C.—Club race.

Friday, July 7

Yachtsmen's Club—Ocean race.

N. Y. Y. C.—Huntington cups off Huntington.

Eastern Y. C.—Start of cruise Peak's Island.

Saturday, July 8

Brooklyn Y. C.—Power club races.

Annisquam Y. C.—Open races.

Edgewood Y. C.—N. B. A.

Lavalette Y. C.—Club race.

Brooklyn Y. C.—Y. R. A. G. B., championship race.

N. Y. Motor B. C.—Club races.

Detroit M. B. C.—Club races.

Corinthian Y. C.—Y. R. A. M. B., club races, Marblehead.

Roy. Can. Y. C.—Cruising race, club race.

New York Y. C.—Annual regatta and Bennett cups off Huntington.

Riverside Y. C.—L. I. S. Y. R. A.—Annual regatta.

New Roch. Y. C.—L. I. S. Y. R. A., cruising race.

Mantoloking Y. C.—Club races.

Roy. Ken. Y. C.—Start of annual cruise.

Seawanhaka Cor. Y. C.—15 footers.

Eastern Y. C.—To Boothbay.

Columbia Y. C.—Club race.

Sunday, July 9

Coos Bay M. B. C.—Cruise.

South Coast Y. C.—Race for Nordlinger Trophy.

Eastern Y. C.—To Tennant Harbor.

Monday, July 10

Amer. Y. C.—L. I. S. Y. R. A., start of Manhasset cup races.

Eastern Y. C.—To Camden.

(Continued on page 48)

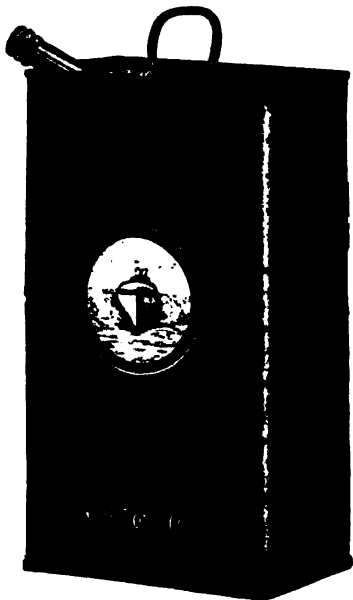
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RACING EVENTS, 1911—Continued

Tuesday, July 11

Eastern Y. C.—To Fox Island Thoroughfare.

Wednesday, July 12

Roy. Can. Y. C.—Ladies' race.

Eastern Y. C.—To Billings Cove.

Thursday, July 13

Eastern Y. C.—To Bartlett's Narrows.

Friday, July 14

M. B. C. of America—Marblehead race.

Eastern Y. C.—To Winter Harbor.

Saturday, July 15

Brooklyn Y. C.—Power-boat races.

Annisquam Y. C.—Open races.

Del. Riv. Club—Club races.

Crescent A. C.—Y. R. A. G. B., open.

Detroit M. B. C.—Club races.

Columbia Y. C.—Y. R. A. M. B., City Point.

Corinthian Y. C.—Y. R. A. M. B., club races.

Boston Y. C.—Y. R. A. M. B., start of cruise.

Roy. Can. Y. C.—Club races.

Larchmont Y. C.—L. I. S. Y. R. A., race week (15-22).

Mantoloking Y. C.—Ladies' race.

Jackson Park Y. C.—Club race.

Seawanhaka Cor. Y. C.—15 footers.

E. Greenwich Y. C.—Open.

Boston Y. C.—Cruise to Boothbay.

Eastern Y. C.—To Bar Harbor.

Sunday, July 16

Eastern Y. C.—Bar Harbor to Marblehead.

Chesapeake Bay Y. R. A. (16-26)—Race week.

Monday, July 17

Columbia Y. C.—Cruise to Marblehead.

Tuesday, July 18

Columbia Y. C.—Cruise to Marblehead.

Wednesday, July 19

Roy. Can. Y. C.—Ladies' race.

Thursday, July 20

Motor Boat C. of Buf.—Start of international cruiser race.

Duluth Boat Club—Carnival 20-21-22.

Saturday, July 22

Brooklyn Y. C.—Power-boat races.

Brooklyn Y. C.—Start of Halifax race.

Annisquam Y. C.—Open races.

Weetamoe Y. C.—N. B. A., special.

N. Y. Canoe C.—Y. R. A. G. B., open.

New York M. B. C.—Club races.

Detroit M. B. C.—Club cruise.

Chicago Y. C.—Mackinac race.

Cohasset Y. C.—Y. R. A. M. B., open race.

Corinthian Y. C.—Y. R. A. M. B.—Club race.

Royal Can. Y. C.—Cruising race.

South Coast Y. C. (22-23)—Race for Montgomery Cup.

Mantoloking Y. C.—Club race.

Larchmont Y. C.—Race week ends.

Sea. Cor. Y. C.—15 footers.

Westhampton C. C.—Club race.

Jackson Park Y. C.—Race to Waukegon.

Roy. Ken. Y. C.—Club races.

Sunday, July 23

Corinthian Y. C. (Calif.)—Hammersmith Trophy Race.

Wednesday, July 26

Roy. Can. Y. C.—Ladies' race.

Saturday, July 29

Brooklyn Y. C.—Power-boat races.

Annisquam Y. C.—Open races.

Bristol Y. C.—N. B. A., ocean race.

Del. Riv. Club—Club races.

Atlantic Y. C.—Y. R. A. G. B., championship races.

Detroit M. B. C.—Navigation contest.

Corinthian Y. C.—Y. R. A. M. B., club race.

Roy. Can. Y. C.—Ladies' race.

Ind. Harbor Y. C.—L. I. S. Y. R. A., annual regatta.

Mantoloking Y. C.—Club race.

Roy. Ken. Y. C.—Bay of Fundy race.

Seawanhaka Cor. Y. C.—Ladies' day.

Squantum Y. C.—Y. R. A.

Sunday, July 30

California Y. C.—Wallace Trophy race.

Monday, July 31

Edgewood Y. C.—N. B. A. (31-1-2-3), Interstate knockabout series.

American Y. C.—Y. R. A. M. B.—Newburyport.

Roy. Can. Y. C.—George Cup trial races.

(Continued on page 54)

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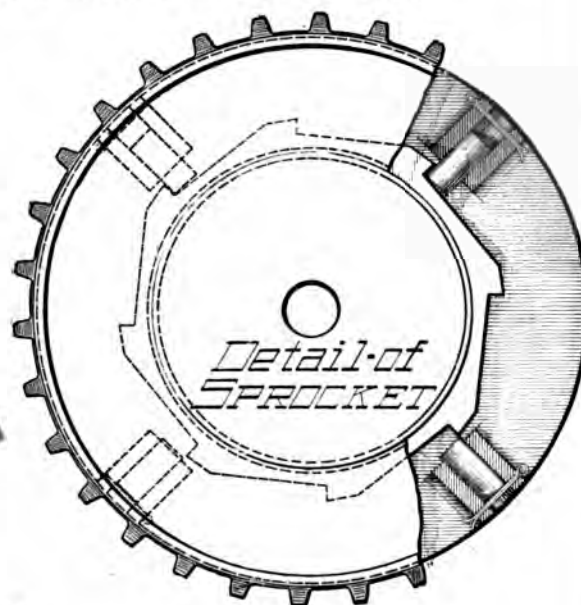
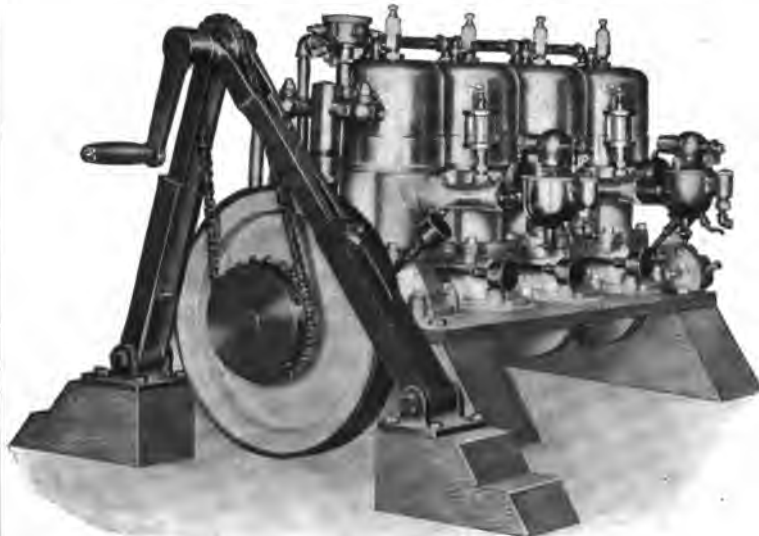
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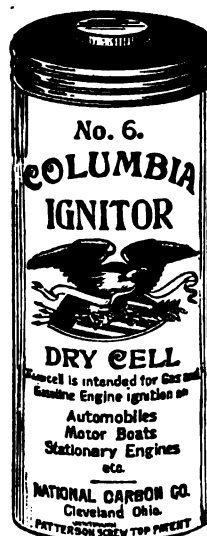
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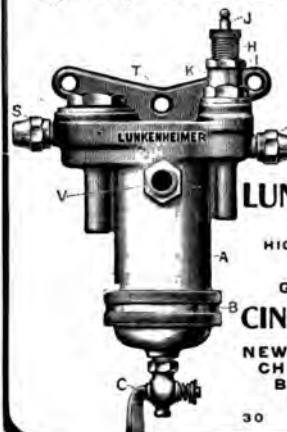
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RACING EVENTS, 1911—Continued

Wednesday, August 2

Mantoloking Y. C.—Ladies' races.
Edgewood Y. C.—Interstate knockabout series.

Thursday, August 3

Great Lakes P. B. League (3-4-5)—Detroit.
N. Y. Y. C.—Rendezvous of cruise.
Fall River Y. C.

Friday, August 4

Byram River Y. C.—R. R. Y. C. Cup race.
Corinthian Y. C. (Calif.)—San Francisco to Santa Cruz race.
New York Y. C.—To Morris Cove.

Saturday, August 5

Brooklyn Y. C.—Power-boat races.
Annisquam Y. C.—Open races.
Edgewood Y. C.—N. B. A., race week.
Lavallette Y. C.—Club race.
Marine & Field Club—Y. R. A. G. B., championship races.
N. Y. M. B. C.—Club races.
Motor Boat C. of Buf.—Whitehall Cup and Glasgow Trophy races.

Roy. Can. Y. C.—Cruising race; club race.
Corinthian Y. C. of Stamford—L. I. S. Y. R. A., annual regatta.

Horseshoe Harbor Y. C.—L. I. S. Y. R. A., annual regatta.
New York Y. C.—To New London.

Lynn Y. C.—R. Y. A., Bass Point.
South Coast Y. C. (5-6)—Race for the McFarland Cup.
Mantoloking Y. C.—Club races.

Roy. Ken. Y. C.—Club races.
Chelsea Y. C.—Club races.
Sea. Cor. Y. C.—15 footers; 6th championship.
Marine & Field—G. B. Y. R. A.

Sunday, August 6

New York Y. C.—At New London.
Detroit M. B. C.—Start of Scripps' cruise.
Lynn Y. C.—Y. R. A. M. B., Bass Point.
Lynn Y. C.—Y. R. A. M. B., squadron run.
New Rochelle Y. C. (5-13)—Cruise.

Monday, August 7

Conanicut Y. C.—N. B. A., race week.
Eastern Y. C.—Y. R. A. M. B., special open race.
New York Y. C.—To Fort Pond Bay.
Edgewood Y. C.—Special.

Tuesday, August 8

Rhode Id. Y. C.—N. B. A., race week.
Boston Y. C.—Y. R. A. M. B., Marblehead.
Westhampton C. C.—Ladies' race.
New York Y. C.—To New Bedford.
Conanicut Y. C.—Open.
Boston Y. C.—Y. R. A., Marblehead.

Wednesday, August 9

King Philip Y. C.—N. B. A., race week.
Cor. Y. C. (9-10-11)—Y. R. A. M. B., mid-Summer series.
Mantoloking Y. C.—Ladies' race.
New York Y. C.—To Newport.

Thursday, August 10

Fall River Y. C.—N. B. A., race week.
New York N. Y.—Astor Cups.
Cor. Y. C.—Marblehead mid-Summer series.

Friday, August 11

Newport Y. C.—N. B. A., race week.
New York Y. C.—King's Cup, Newport.
Rhode Island Y. C.—Open.
Cor. Y. C.—Marblehead, mid-Summer series.

Saturday, August 12

Brooklyn Y. C.—Power-boat races.
Brooklyn Y. C.—Fire Island races, sail and power.
Annisquam Y. C.—Open races.
Bristol Y. C.—N. B. A., race week.
Del. Riv. Club—Open races.
Byram Riv. Y. C.—Stratford Shoal race.
Chelsea Y. C.—Club races.
New York Y. C.—Cruise disbands, Newport.
Brooklyn Y. C.—Y. R. A. G. B., championship races.
Corinthian Y. C.—Y. R. A. M. B., open races.
Roy. Can. Y. C.—Club races.
Huguenot Y. C.—L. I. S. Y. R. A., annual regatta.
Bridgeport Y. C.—L. I. S. Y. R. A., annual regatta.
South Coast Y. C.—Race to San Pedro and Santa Barbara.
Mantoloking Y. C.—Club races.
Roy. Ken. Y. C.—Club races.
Sea. Cor. Y. C.—15 footers.

(Continued on page 56)



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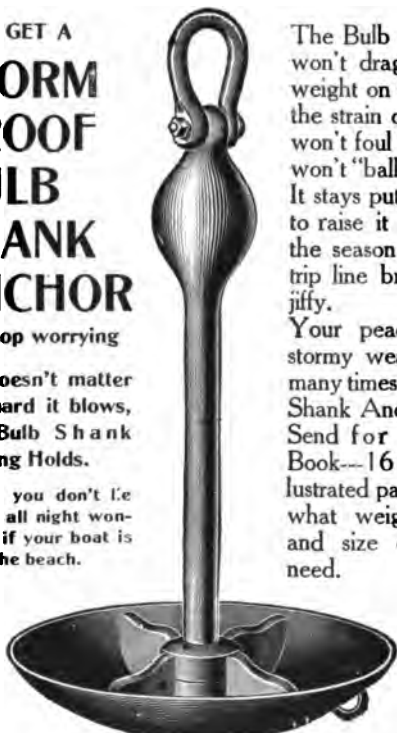
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RACING EVENTS, 1911—Continued

Sunday, August 13

Coos Bay M. B. C.—Cruise.
South Coast Y. C. (13-19)—Race week at Santa Barbara.

Wednesday, August 16

Riverside Y. C.—L. I. S. Y. R. A., special.
Mantoloking Y. C.—Ladies' race.

Thursday, August 17

Gloucester Y. C.—Y. R. A. M. B.

Saturday, August 19

Brooklyn Y. C.—Power-boat races.
Annisquam Y. C.—Open races.
Edgewood Y. C.—N. B. A., special.
Taunton Y. C.—N. B. A.
Atlantic Y. C.—Y. R. A. G. B., championship races.
N. Y. M. B. C.—Club races.
Motor Boat C. of Buf.—Club run.
Annisquam Y. C.—Y. R. A. M. B.
Walloon Y. C.—Regatta.
Toledo Power Boat Club (19-20)—Annual regatta.
Roy. Can. Y. C.—Cruising race and club race.
Stamford Y. C.—L. I. S. Y. R. A., annual regatta.
Hempstead Hbr. Y. C.—L. I. S. Y. R. A., special race.
Harlem Y. C.—L. I. S. Y. R. A., cruising race.
Mantoloking Y. C.—Club race.
Roy. Ken. Y. C.—Club race.
Sea. Cor. Y. C.—15 footers.
Winthrop Y. C.—Open.

Monday, August 21

August 21-26—Interbay catboats, Hull.
" 21-26—Quincy Cup series.

Tuesday, August 22

" 22-24—Atlantic Y. C. race week.
" 22-24—Crescent A. C. Lipton Cup.

Thursday, August 24

" 24—Fall River Y. C.—Handicap.

Friday, August 25

Boston Y. C.—Y. R. A. M. B., mid-Summer series.

Saturday, August 26

Brooklyn Y. C.—Power-boat races.
M. B. C. of America (26-28-29)—British International Trophy races.
Annisquam Y. C.—Open races.
Del. Riv. Club—Club races.
Bensonhurst Y. C.—Y. R. A. G. B., championship races.
Quincy Y. C.—Y. R. A. M. B.
Walloon Y. C.—Regatta.
New Rochelle Y. C.—L. I. S. Y. R. A., special regatta.
Northport Y. C.—L. I. S. Y. R. A., annual regatta.
Mantoloking Y. C.—Ladies' race.
Westhampton C. C.—Open races.
Moosehead Lake Y. C.—Annual regatta.
Rhode Island Y. C.—Ocean race.

Monday, August 28

Hingham Y. C.—Y. R. A. M. B.
L. Y. R. A.—Regatta at Toronto (Aug. 28 to Sept. 2).

Tuesday, August 29

Boston Y. C.—Y. R. A. M. B., mid-Summer series (29-30).

Wednesday, August 30

Boston Y. C.—Y. R. A., mid-Summer series.

Thursday, August 31

Boston Y. C.—Y. R. A., Hull, catboat championship.

Friday, September 1

Sea. Cor. Y. C.—L. I. S. Y. R. A., special race.
Boston Y. C.—Hull, catboat championship.

Saturday, September 2

Brooklyn Y. C.—Power-boat races.
Annisquam Y. C.—Open races.
Bristol Y. C.—N. B. A., open.
Lavallette Y. C.—Open races.
Byram River Y. C.—Sheldrake Cup race.
Marine & Field Club—Y. R. A. G. B., championship races.
New York M. B. C.—Club races.
Wollaston Y. C.—Y. R. A. M. B.
Roy. Can. Y. C.—Fischer Cup races.
Sea. Cor. Y. C.—L. I. S. Y. R. A., Fall regatta.
South Coast Y. C. (2-3-4)—Cruise to Isthmus.
Corinthian Y. C.—Baltimore, club races.
Taunton Y. C. (2-3-4)—Club cruise.
Moosehead Lake Y. C.—Annual club run.
Jackson Park Y. C.—Michigan City race.

Saturday, September 2

Roy. Ken. Y. C.—Club cruise.
Larchmont Y. C.—Inter-club class.
Boston Y. C.—Hull, catboat championship.

Sunday, September 3

Coos Bay M. B. C.—Cruise.
City Id. Y. C.—Club cruise.

Monday, September 4

Annisquam Y. C.—Open races.
Edgewood Y. C.—N. B. A., special.
Lavallette Y. C.—Club race.
National Carnival begins.
Milford Y. C.—Open races.
Byram Riv. Y. C.—Trustees Cup race.
Atlantic Y. C.—Y. R. A. G. B., open.
Hudson R. Y. R. Ass'n—Regatta at Yonkers.
Boston Y. C.—Club, Hull.
Toledo Power B. C.—Club races.
Roy. Can. Y. C.—Darrell Shield race.
Larchmont Y. C.—L. I. S. Y. R. A., Fall regatta.
Norwalk Y. C.—L. I. S. Y. R. A., annual regatta.
Sea. Cor. Y. C.—15 footers.
Sachems Head Y. C.—L. I. S. Y. R. A., annual regatta.
Fall River Y. C.—Open.
Chelsea Y. C.—Club race.

Tuesday, September 5

Chatham Y. C.—Club race.

Thursday, September 7

N. Y. Y. C.—Autumn cups off Glen Cove.

Saturday, September 9

E. Greenwich Y. C.—N. B. A.
Indian Harbor Y. C.—Fall regatta.
Del. Riv. Club—Club races.
Bensonhurst Y. C.—Y. R. A. G. B., championship races.
Motor B. C. of Buf.—Championship of Great Lakes for Thomas Trophy.
Pacific Inter Club Y. A.—Annual regatta.
Roy. Can. Y. C.—Prince of Wales Cup race.
Indian Harbor Y. C.—L. I. S. Y. R. A., Fall regatta.
Columbia Y. C. (N. Y.)—Club races.
Jackson Park Y. C.—Bennett Cup.
Sea. Cor. Y. C.—15 footers.
Quincy Y. C.—Club race.

Sunday, September 10

Y. R. A. Mass. Bay—Rendezvous at Hull.

Saturday, September 16

Atlantic Y. C.—Y. R. A. G. B., championship races.
Man. Bay Y. C.—L. I. S. Y. R. A., Fall regatta.
Larchmont Y. C.—L. I. S. Y. R. A., special races.
South Coast Y. C.—Power-boat races.
Taunton Y. C.—Club races.
Jackson Park Y. C.—Club races.
Sea. Cor. Y. C.—15 footers.

Sunday, September 17

New York M. B. C.—Club races.
City Id. Y. C.—Fall regatta.

Saturday, September 23

Indian Harbor Y. C.—L. I. S. Y. R. A., championship of the Sound race.
Del. Riv. Club—Club races.

Jackson Park Y. C.—Indian Harbor race.

Sunday, September 24

New York M. B. C.—Rockland Light race.
California Y. C.—Du Brutz Cup race.
Corinthian Y. C. (Calif.)—Power-boat races.

Saturday, September 30

Jackson Park Y. C.—Club race.

Sunday, October 1

South Coast Y. C.—Power-boat races.

Saturday, October 7

Jackson Park Y. C.—Club race.

Sunday, October 22

Chatham Y. C.—Club race.

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Savannah, Ga. (Gasolene Pyro)...	Salisbury Mar. Const. Co., Salisbury, Md.
Savannah, Ga. (Gasolene Pyro)...	Sav. Y. L. & Eng. Co., Savannah, Ga.
Sewaren, N. J. (Gasolene Pyro)...	R. O. Acker, Sewaren, N. J.
Shelton, Conn. (Gasolene Pyro)...	John A. Thomas, Shelton, Conn.
Solomon, Md. (Gasolene Pyro)...	M. M. Davis, Solomon, Md.
Sorrento, Me. (Gasolene Pyro)...	P. L. Aiken, Sorrento, Me.
South Duxbury, (Gas. Pyro)...	Merritt Ferrell, South Duxbury, Mass.
South Essex, Mass. (Gas. Pyro)...	Wm. E. Hall, P., South Essex, Mass.
South Freeport, Me. (Gas. Pyro)...	L. A. Dixon, P., South Freeport, Me.
Southport, N. C. (Gas. Pyro)...	J. B. Ruark, Southport, N. C.
St. Augustine, Fla. (Gas. Pyro)...	G. W. Corbett, St. Augustine, Fla.
St. Francis, Fla. (Gas. Pyro)...	John E. Harris, St. Francis, Fla.
St. John, N. B. (Gas. Pyro)...	Geo. E. Holder, St. John, N. B., Can.
St. Michaels, Md. (Gas. Pyro)...	John W. Covington, St. Michaels, Md.
Stonington, Conn. (Gas. Pyro)...	Wm. P. Bindloss, Stonington, Conn.
Stuart, Fla. (Gas. Pyro)...	Stanley Kitching, P., Stuart, Fla.
Tampa, Fla. (Gas. Pyro)...	C. E. Douglas, 142 W. 10th Ave., Tampa.
Tampa, Fla. (Gas. Pyro)...	Florida Gas Eng. & Supply Co., Tampa.
Tarrytown, N. Y. (Gas. Pyro)...	Tarrytown Yacht Club, Tarrytown, N. Y.
Thimble Islands, (Gas. Pyro)...	Leo. Spitzer, Stony Creek, Conn.
Thunderbolt, Ga. (Gas. Pyro)...	W. M. Kidwell, Thunderbolt, Ga.
Titusville, Fla. (Gas. Pyro)...	M. L. von Koppelow, Titusville, Fla.
Titusville, Fla. (Gas. Pyro)...	Wm. F. Green, Titusville, Fla.
Trenton, N. J. (Gas. Pyro)...	Trenton Y. C., Trenton, N. J.
Walton, Fla. (Gas. Pyro)...	W. H. Harris, Walton, Fla.
Wanchese, N. C. (Gas. Pyro)...	E. R. Daniels, Wanchese, N. C.
Washington, D. C. (Gas. Pyro)...	Corinthian Y. C., Washington, D. C.
Watervleat, N. Y. (Gas. Pyro)...	D. F. La Belle, Watervleat, N. Y.
West Mystic, Conn. (Gas. Pyro)...	Auto Boat Co., West Mystic, Conn.
West Mystic, Conn. (Gas. Pyro)...	T. A. McCreery, West Mystic, Conn.
West Palm Beach, Fla. (Gas. Pyro)...	C. D. Blakeslee, West Palm Beach, Fla.
Wethersfield, Conn. (Gas. Pyro)...	T. W. Hannum, Wethersfield, Conn.
Wilmington, N. C. (Gas. Pyro)...	C. D. Maffitt, 105 N. Water St., Wilmin'n.
Wiscasset, Me. (Gas. Pyro)...	F. F. Pendleton, Wiscasset, Me.
Wissinoming, Pa. (Gas. Pyro)...	Alacia Y. C., Wissinoming, Pa.

INLAND WATERS

Burlington, Vt. (Gasolene Pyro)...	Lake Champlain Y. C., Burlington, Vt.
Charlevoix, Mich. (Gas. Pyro)...	R. A. Ranger, Charlevoix, Mich.
Chaumont, N. Y. (Gas. Pyro)...	Crescent Y. C., Chaumont, N. Y.
Cincinnati, Ohio. (Gas. Pyro)...	R. D. Gates, 502 W. 9th St., Cincinnati, O.
Duluth, Minn. (Gas. Pyro)...	W. B. Taylor, Duluth, Minn.
Geneva, N. Y. (Gas. Pyro)...	Fay & Bowen Engine Co., Geneva, N. Y.
Greenville, Mich. (Gas. Pyro)...	C. T. Wright Eng. Co., Greenville, Mich.
Harbor Springs, (Gas. Pyro)...	John Lamb, Harbor Springs, Mich.
Isle La Motte, Vt. (Gas. Pyro)...	W. Carrol Twombly, Isle La Motte, Vt.
Isle Royale, Mich. (Gas. Pyro)...	W. H. Singer, Isle Royale, Mich.
Ithaca, N. Y. (Gas. Pyro)...	Wm. Jarvis, Ithaca, N. Y.
Lake Champlain, (Gas. Pyro)...	J. C. Stafford, Essex, N. Y.
Lake Champlain, (Gas. Pyro)...	H. P. Smith, Westport, N. Y.
Lake Memphremagog, (Gas. Pyro)...	G. H. Newland, Eagle Point, Vt.
Lake View House, (Gas. Pyro)...	W. J. Samson, Lake View House, Vt.
Little Current, Ont. (Gas. Pyro)...	Byron H. Turner, Water St. Wharf, Ont.
Mackinac Island, (Gas. Pyro)...	N. J. Muldick, Mackinac Island, Mich.
Manistee, Mich. (Gas. Pyro)...	H. L. Harley, Manistee, Mich.
Menasha, Wis. (Gas. Pyro)...	Brighton Boat & Supplies Co., Menasha.
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Newport, Vt. (Gas. Pyro)...	C. H. Newland, Newport, Vt.
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Oneida Lake, N. Y. (Gas. Pyro)...	Hotel St. Charles, Sylvan Beach, N. Y.
Oswego, N. Y. (Gas. Pyro)...	John S. Parsons, Oswego, N. Y.
Peoria, Ill. (Gas. Pyro)...	Central Motor Boat Co., Peoria, Ill.
Plattsburg, N. Y. (Gas. Pyro)...	Dock & Coal Co., Plattsburg, N. Y.
Portage Lake, Mich. (Gas. Pyro)...	Oulkauma Sail. Club, Portage Lake, Mich.
Port Huron, Mich. (Gas. Pyro)...	Liscom Bros., Port Huron, Mich.
Rondeau Harbor, (Gas. Pyro)...	W. R. Fellows, Jr., P., Blenheim, Ont.
Sault Ste. Marie, (Gas. Pyro)...	Kibby & Shields, Sault Ste. Marie, Mich.
Seneca Lake, N. Y. (Gas. Pyro)...	F. B. Weller, Watkins, N. Y.
South Haven, Mich. (Gas. Pyro)...	L. W. Newbire, South Haven, Mich.
Syracuse, N. Y. (Gas. Pyro)...	Severe Dorion, 8 Malcolm Bldg., Syracuse.
Union Springs, N. Y. (Gas. Pyro)...	J. F. Woodworth, Union Springs, N. Y.
Whitehall, N. Y. (Gas. Pyro)...	E. P. Manville, Whitehall, N. Y.

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Eagle Harbor, Wash. (Gas. Pyro)...	Nugent & De Chanaud, Winslow, Wash.
Eureka, Cal. (Gas. Pyro)...	H. Lund, Eureka, Cal.
Los Angeles, Cal. (Gas. Pyro)...	W. J. Reeve, Los Angeles, Cal.
Marshallfield, Ore. (Gas. Pyro)...	Coos Bay Oil & Supply Co., Marshallfield
Portland, Ore. (Gas. Pyro)...	Oregon Yacht Club, Portland, Ore.
Regina, Sask. (Gas. Pyro)...	Regina Boat Club, Regina, Sask.
San Francisco, Cal. (Gas. Pyro)...	Lewis O. Haven, 75 Beale St., San Fran.
San Pedro, Cal. (Gas. Pyro)...	C. D. Callahan, San Pedro, Cal.
Tacoma, Wash. (Gasolene Pyro)...	A. Foss, Foss Boathouse, Tacoma, Wash.
Tacoma, Wash. (Gasolene Pyro)...	A. Foss, Foss Salm. Bch., Tacoma, Wash.
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THROUGH THE NIAGARA RAPIDS

The story of Captain Larsen's daring trip through the Niagara Rapids, last September, in a Ferro-driven power boat, is interestingly told in a handsome book, "Ferro Experiences from the Waters of the World," just gotten out by the Ferro Machine & Foundry Company of Cleveland, Ohio. The account contains some hitherto unpublished details of this remarkable voyage. It tells how the idea of navigating the treacherous waters with anything less than a 200-h.p. engine was laughed at, and how one by one the entrants in the proposed race got "cold feet" and dropped out, until only Captain Larsen was left, who purchased a stock model 8-h.p. Ferro engine, despite the fact that other manufacturers offered to furnish him gratis with a specially built machine. The captain's preparation for the trip is related with details of his morning walks along the course, studying it and planning his trip, and finally of the eventful day when he successfully turned the trick when the engine and boat were buffeted around and subjected to the most severe strains to which a craft could be put. He demonstrated to the world the perfection which the development of marine engines has reached. Besides the account of Captain Larsen's trip, this book, "Ferro Experiences from the Waters of the World," tells of many interesting unusual and thrilling experiences of Ferro owners in all parts of the world, with actual illustrations. Examples of these are: The Consistent Record of Victories of the Famous Viper III; Winning of the Perpetual Challenge Cup by Flollie of San Francisco; The Fast Los Angeles Boat Iroquois; Bear Hunting in a Motor Boat in Alaska; Ferro Victories in South Africa, and many others too numerous to mention. The cover is an attractive one, showing some exceedingly unusual photographs of power boats. The book is replete with pictures, and just the kind of pithy accounts the power-boatist delights to read. A copy may be had for the asking, by addressing the Ferro Machine & Foundry Company, 53 Hubbard Avenue, Cleveland, Ohio.

EXPORT CATALOG

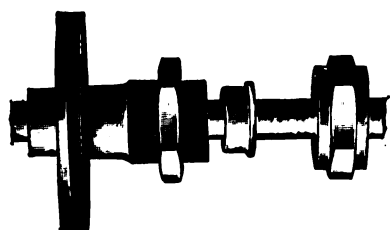
The Gray Motor Company of 536 Woodward Avenue, Detroit, Mich., have recently printed a catalog in Spanish, French and German, which is well illustrated, showing their entire line of engines for export purposes. They also show the equipment they furnish for each engine, and the method of boxing engines for shipment, giving dimensions in millimeters and all specifications. It is certainly a catalog that will help them materially in increasing their foreign sales, and to any one interested they will gladly send one without charge.

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The Sterling Engine Company, Buffalo, N. Y., anticipating the demand that will be made on them for a larger heavy-duty engine, as a result of the wonderful performance made by boats with Sterling engines at Palm Beach, Fla., last March, which proved conclusively the reliability and endurance of Sterling engines, make announcement of the fact that they now have, ready for the market, a 100-h.p., heavy-duty engine, having eight cylinders, with bore of 6 1/2 x 8-inch stroke, developing its rated power at a speed of 400 r.p.m. The same material, workmanship and methods of construction are embodied in this new size engine as are found in all Sterling engines. This new size belongs to the well-known Sterling, heavy-duty group, which includes a 2-cylinder, 20-h.p., a 4-cylinder, 40-h.p., and a 6-cylinder, 60-h.p., which with the new 8-cylinder, 100-h.p., gives this Company a range of sizes, for heavy-duty requirements in large cruisers and work boats, that will enable them to take care of any proposition put up to them within the limits of power of these engines. The elaborate facilities at the Sterling Engine Company's shop enable them to turn out a perfect engine. One of the most interesting parts of their plant is the test room. Every Sterling engine is thoroughly tested, and many very interesting tests are being made at all times. No appointment is necessary to gain admittance to this room, and any one is cordially invited to come there at any time during working hours and see the improved methods that the Sterling Engine Company have for testing their engines and getting them in perfect running order before shipment.

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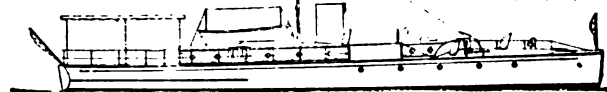
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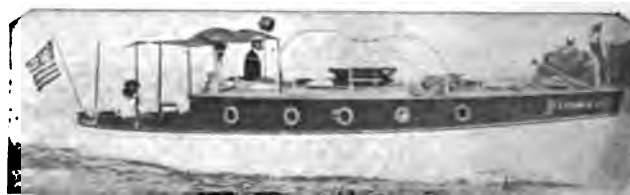
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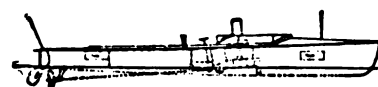
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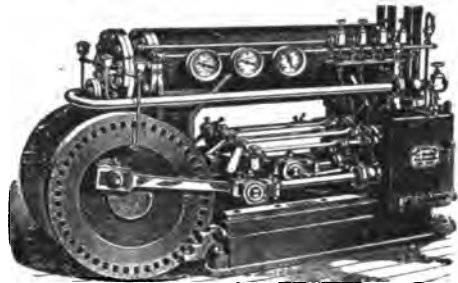
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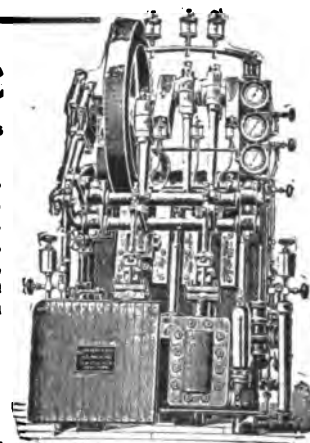
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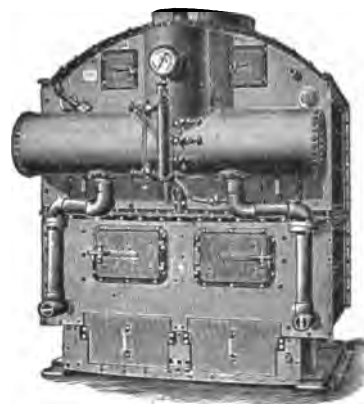
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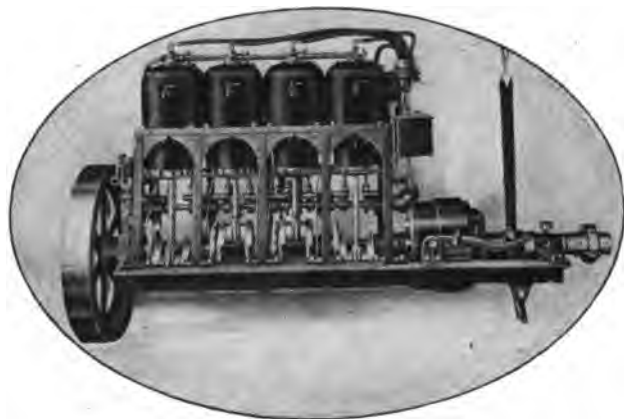
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CAMPBELL ENGINES

The Campbell Motor Company, Wayzata, Minn., are running to their full capacity. The company are enjoying a greater trade this Spring than ever before. They are fully equipped with the most up-to-date machinery and can fill orders promptly.

The 1911 engines contain the latest and best design, construction and materials. They have mechanical lubrication, adjusting screws on push rods to take up the wear, water-jacketed exhaust manifolds, large aluminum side plates on both sides of the crank-case which can be quickly removed for inspecting or adjusting the connecting rods. The crank-shafts are made of hammer-forged steel and are of large diameter and carefully balanced to reduce vibration. The reverse gear is simple and efficient, of the internal gear type, and is self-contained in the base of the engine,



easily removed without disturbing other parts of the engine. The ignition system of Campbell engines can be had with either the well-known Atwater Kent or Bosch systems. They only recommend the Bosch system for three or more cylinder engines. They use the Schebler carbureter, which is the best known of float-feed design, and contains a throttle for gauging the amount of gasified vapor admitted to the cylinders.

The company recently received an order for four 20-h.p. engines for the U. S. Naval Service at Newport, R. I., also one 21-h.p. for Burt Lake, Mich., two 15-h.p. to their agent at Seattle, one 5-h.p. to Wilmington, Cal., and one 5-h.p. to Portland, Ore.

Their agent at Wilmington, Cal., recently installed a 6-cylinder, 60-h.p. engine in a heavy-duty pleasure boat, and says the party is highly pleased with it.

The company claim for their engines exceptional durability, accessibility and economy in fuel which have made good the expression, "Buy a Campbell and keep Going."

If interested write for catalog and prices, which will be sent free upon request.

* * *

THE GEO. B. CARPENTER CATALOG

Messrs. Geo. B. Carpenter & Co., of Chicago, Ill., manufacturers and jobbers of Marine Hardware and Supplies, have issued a catalog which is sure to take a foremost position in the trade.

The managing heads of this company are sportsmen themselves and have an intimate knowledge of the requirements of the Yachting Game. They have behind them a strong and vigorous organization and the accumulated experience of seventy years of success since the first establishment of the business.

Their latest catalog is a splendid book of over 500 pages, containing not only a very complete assortment of Marine Accessories, but also two valuable supplementary chapters,—one covering the Installation and Operation of Marine Gasoline Engines, and the other the Care and Handling of Sailboats,—both written by recognized authorities.

The Carpenter Company are mailing this catalog to any address on receipt of twenty cents to cover postage, and will refund this amount on the first order for goods. No up-to-date yachtsman can afford to be without this catalog.

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SPANISH CATALOG

The Sterling Engine Company, of Buffalo, N. Y., alive to the demands of the general trade, have just received from the printers and are now distributing a Spanish edition of their 1911 catalog. This is a handsome 32-page booklet, fully illustrating and describing the different types and sizes of Sterling engines; also contains photographs of well-known boats. Copy of this catalog will be sent free to any one writing to The Sterling Engine Company, Buffalo, N. Y.

* * *

YACHT SALES

The Hollis Burgess Yacht Agency has sold the auxiliary sloop Zeruah, owned by W. Chamberlain, of Portland, Me., to James A. Veech, of Connellsville, Pa., who will use her on the Bay of Fundy.

The same agency has also sold the fast Herreshoff racing sloop Virginia, owned by Hollis Burgess, to Charles L. Joy, of Dorchester, Mass.; the 42-ft. power boat Saracen II, owned by E. E. Synge, of Boston, to George H. Griggs, of Winthrop, Mass.; the knockabout Bee, owned by Chas. W. Barron, of Cohasset, Mass., to J. W. Merrill, of Manchester, Mass., and the Sonder-Klasse racing sloop Eel, owned by Herbert M. Sears, of Boston, to Com. E. W. Clark, of the Philadelphia Corinthian Y. C.; and has chartered the steam yacht Jule, owned by Benj. P. Cheney, of Boston, to Roger Upton, of Marblehead, Mass.

* * *

JOE'S GEARS

Joe's Improved Reversing Gears, because of their excellence, have won a most enviable reputation at home and abroad. They combine strength with lightness and compactness, ease of operation with holding power that will not slip under the highest tension. They are durable, reliable, simple to install and handle, and afford such perfect control of power that accidents from collisions are reduced to the minimum.

Special Joe's Gears are made for racing craft and extra heavy-duty engines. There are thousands of Joe's gears now in use that are giving the highest satisfaction. A neat catalog describing Joe's gears, also Joe's One-Way Clutches and Joe's Rear Starters will be sent free upon application by The Snow & Petrelli Manufacturing Company, New Haven, Conn., U. S. A.

* * *

NEW STA-RITE SPARK PLUG FACTORY

The R. E. Hardy Company, Chicago, Ill., announce their removal from 1735 Michigan Ave. to their new plant at Austin Ave. and May St.

The increasing demand for Sta-Rite plugs has made it necessary to utilize the entire space and facilities of this modern factory. Additional automatic screw machines are installed, which will enable them to triple their output.

They also contemplate the manufacture of other engine accessories.

* * *

THREE-WAY VALVE

The Detroit Three-Way Valve consists of a globular body with three openings—one at the base through which the water enters and two at the sides, at right angles to each other. The shell is so arranged that all of the water coming up through the opening in the base can be turned through either one of the side openings or it can be graduated to divert any required volume of water through either of the openings and turn the rest through the other hole. The handle is indexed and shows what proportion of water is passing through each opening. The globular form of body prevents the shell from sticking because it comes in contact with only a small portion of the body at the top and bottom and at a narrow, vertical strip on either side where a gate is formed for closing the waterway. The tapering shell takes up any wear occurring in the valve. The spring in the bonnet of valve holds the conical shell up to its seat, at the same time exerting a downward pressure on the small rubber washer slipped over the stem and held within the chamber in the cup of the valve. The pressure of the spring expands the rubber gasket, making it "self-packing." The valve is threaded for either $\frac{1}{2}$ or $\frac{3}{4}$ in., and all threads are female. Further information will be sent to any one by addressing Detroit Lubricator Company, Detroit, Mich.

THE DYNETO LIGHTING SYSTEM FOR POWER BOATS

Some dark night you will want a real light, one that is absolutely dependable and powerful enough to penetrate the deepest gloom. A searchlight should be more than a light to flash around on scenery and over your fellow enthusiasts. You want something of practical use and something that will save you from accident either in navigating crowded water or in pulling up to a shadowy dock or buoy. The power of a light is not always in its size. There is a factor more important, namely, the source of supply.

The Dyneto Lighting outfit for power boats is something that can be depended upon.



The Dyneto dynamo proper is a new electrical machine made after years of study and experiment to produce a generator that will run at any speed under severe usage.

The Dyneto dynamo is connected direct to engine or to the shaft and operates without governor or rheostat. It is simple in construction and there are no attachments that need to be fooled with.

This machine develops electric current to charge a 3-cell, 6-volt storage battery, from which electricity is used for searchlights, port and starboard lights, cabin lamps, portable lamp on cord, also for operating electric horn, electric fans, electric cooking devices, etc.

The capacity of this storage battery is sufficient to run signal and safety lights in dock for 50 hours. And it is simply a matter of starting up engine to keep storage battery in working charge. When the Dyneto is running, of course, the electric current is supplied direct to lights and apparatus.

This system of lighting overcomes all the arguments against lighting by electricity, and makes it just as dependable as your light at home or office. Many boat-owners, especially on an extended cruise, have realized the limitations of the storage battery alone. The supply would give out just where there was no available charging station for miles to come. The Dyneto makes it possible to take your own charging station along with you.

Again, the Dyneto system steps to the front because it is not necessary to have an expert electrician on board.



There are no governors or rheostats to be adjusted or kept in adjustment.

The Dyneto system takes up no room. It is compact and sets out of the way in or back of the engine pit. The Dyneto occupies a square foot of space only, and the storage battery even less. The wiring and connections are simple. From instructions furnished with the outfit any boat-owner can make the installation.

Write the Dyneto Electric Company, Dept. 8, Syracuse, N. Y., for full information and prices on this wonderful equipment. Be sure to address Dept. 8, because this firm also has a department manufacturing and selling a similar system of lighting for automobiles.

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For \$5 we will from photograph furnished by you, prepare a half-tone plate of your boat, measuring 3 1/4 inches wide by 2 1/2 inches deep, and print same with a 100-word description. **Reach 30,000 Men**
This is an opportunity for boat sellers to reach a large and wide-spread market, to every one of whom is either a boat buyer or a boat seller. THE RUDDER is read only by those interested in yachts, and, therefore, every one of its readers is a probable investor. By advertising in other publications, not one in ten of those who see your advertisement are yachtsmen. But THE RUDDER reaches no blanks. Money must accompany copy and photographs, and must be in our hands by the tenth of the month preceding.

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Rudder Publishing Co., 1 Hudson St., New York, N. Y.

Dear Skipper: The advertisement of the Remoh in the March Rudder on page 210 brought forth eighteen inquiries, four offers, and the boat is now sold for the full price asked. The Rudder has proven its value as an advertising medium and I shall use it a great deal in the future. Yours very truly, ARTHUR P. HOMER.

FOR SALE—A beauty, 26-ft. runabout, very fast and comfortable; seats six; 32-h.p., auto top, wind shield; complete in every detail, all practically new, for half cost. "Tartar," 163d St. and Hudson River.

FOR SALE—A 30-ft. raised deck cruiser; lavatory, toilet, mahogany trimmed. 12-h.p. Palmer, 4-cycle motor. Palmer Bros., Cos Cob, Conn. New York Branch: 31 E. 21st St.

FOR SALE—35-ft. auxiliary knockabout, excellent condition, 5 years old, fittings with her, must sell at once. F. W. O., Box 1538, Boston, Mass.

FOR SALE—Deck sailing canoe; elegant condition; made by Evison. W. A. Coley, 1 Liberty St., New York City.

DO YOU want to sell your old engine? If so, communicate with Bruns, Kimball & Co., 134 Liberty St., New York City.

FOR SALE—Gasoline launch, 29x7; Ferro engine, 11-h.p.; boat in splendid condition; cabin nicely fitted. Will be sold cheap. Apply Morse Dry Dock Co., foot 56th St., Brooklyn, N. Y.

FOR SALE—Six-room bungalow, completely furnished, half acre of land, shrubbery, flowers, kitchen garden, plenty of good drinking water. One mile from salt water; fine harbor; one hour from New York. For further particulars address, Bellpine, Care Rudder Publishing Co., 1 Hudson St., New York City.

FOR SALE—No. 3273. Best bargain on Pacific Coast. Now in commission. Keel schooner 96x21.3x10 ft. draught; trunk cabin; flush deck and cockpit. Interior finished in rosewood, mahogany and marmola. Three double and one single staterooms. All staterooms have running

FOR SALE—One 22-ft. open launch, with tender, 6-h.p. engine, 8-9 miles, equipped with cover, canopy, lights, anchor and mooring anchor, cork cushions, Perfex ignition. \$325. William O. Mann, 82 E. Concord St., Boston, Mass.; telephone Tre 350.

FOR SALE—Motor boat built by Kirk, Toms River, N. J.; 22 ft. 6 in. over all; 5 ft. 10 in. beam; draught 20 in.; 3-h.p. Globe engine (1907 model); hair cushions; spray hoods covering entire board; copper tank; brass trim; galvanized detached top; all in first-class order; price \$400; cost \$850. Address J. W. H., Barnegat City, N. J.

FOR SALE OR CHARTER—Or might consider exchange for a power yacht. The well-known sailing yacht Temeraire. Length o. a. 50.44 ft., length, l. w. l., 29.82 ft., draught 6.81 ft., beam, extreme, 10.20 ft. Designed and framed by William Fife, Scotland, built by James Andrew, Oakville, Ontario, 1905. Sloop rig; Ratsey sails for racing; also yawl

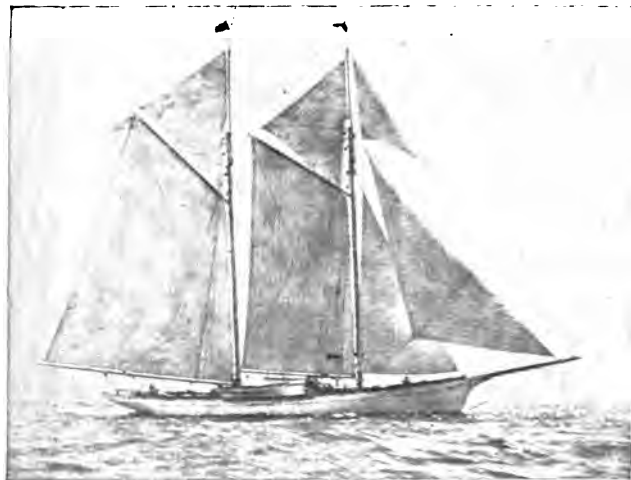


rig for cruising. Complete cruising conveniences, including electric lighting; power dinghy. In excellent condition. Owner selling, owing to not being able to use boat, not now living on yachting waters. Can be inspected at Kingston, Ont. Apply to Colonel R. W. Rutherford, Ottawa, Ont.

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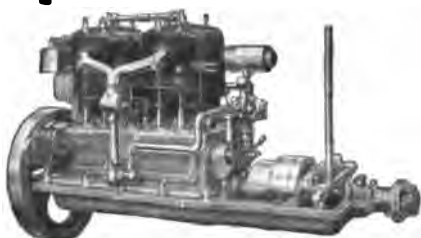
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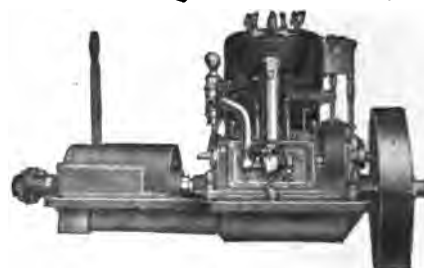
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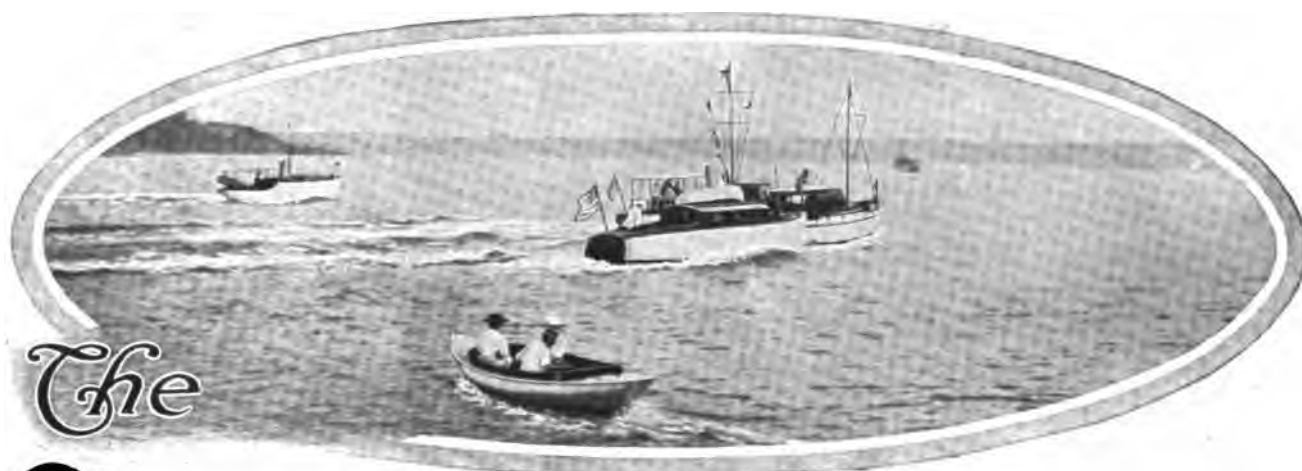
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